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CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

AN ADDRESS on the Resources of Surgery in Certain Emergencies. By CHARLES A. BALLANCE, M.V.O., M.S.Lond., F.R.C.S. Eng., Surgeon to St. Thomas's Hospital, &c. 139

RESEARCHES into Sensory Disturbances from Cerebral Lesions. By HENRY HEAD, M.D. Cantab., F.R.S., Physician to the London Hospital; and GORDON HOLMES, M.D. Dub., Assistant Physician to the National Hospital, Queen-square, and to the Seamen's Hospital, Greenwich.—(*Concluded*) 144

ORIGINAL ARTICLES.

Salvarsan in Syphilis. By WILLMOTT EVANS, B.S., B.Sc. Lond., F.R.C.S. Eng., Surgeon to the Royal Free Hospital, London 152

On the Practical Results of the Recent Advances in the Diagnosis and Treatment of Syphilis. By J. H. SEQUEIRA, M.D. Lond., F.R.C.P. Lond., F.R.C.S. Eng., Physician to the Skin Department of, and Lecturer on Dermatology at, the London Hospital; Consulting Dermatologist to the Radium Institute 153

Intestinal Myiasis. By E. A. COCKAYNE, M.B. Oxon., M.R.C.P. Lond., Casualty Physician to St. Bartholomew's Hospital 155

Double Coxa Vara with other Deformities Occurring in Brother and Sister. By L. E. BARRINGTON-WARD, M.B., Ch.B. Edin., F.R.C.S. Edin., Medical Superintendent, Hospital for Sick Children, Great Ormond-street, London. —(*Illustrated*) 157

The Functions of the Tonsils and the Appendix. By KENELM H. DIGBY, F.R.C.S. Eng., M.B., B.S.Lond., late Surgical Registrar, Guy's Hospital 160

MEDICAL SOCIETIES.

ROYAL SOCIETY OF MEDICINE: SURGICAL SECTION:—The Talma-Morison Operation ... 161

CLINICAL SECTION:—Exhibition of Cases.—Relative Value of Immediate and Delayed Laparotomy in Pneumococcal Peritonitis .. 164

SOCIETY OF MEDICAL OFFICERS OF HEALTH: The Epidemic Grant and School Attendance 166

LIVERPOOL MEDICAL INSTITUTION: Rational Treatment of Chronic Suppurative Otitis Media.—Diagnosis and Treatment of Gastro-duodenal Ulceration 166

EDINBURGH OBSTETRICAL SOCIETY: Pyosalpinx 167

WEST LONDON MEDICO-CHIRURGICAL SOCIETY: Exhibition of Cases 168

UNITED SERVICES MEDICAL SOCIETY: The Medical Service with Lord Methuen's Force in the Advance on Kimberley in 1899, with Reference to the Modern Organisation of the Medical Service 168

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY: Exhibition of Cases, &c. 169

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY: Uterine Fibroids and Allied Conditions, with Special Reference to Treatment 169

REVIEWS AND NOTICES OF BOOKS.

Man and Beast in Eastern Ethiopia. By J. Bland-Sutton, F.R.C.S. Eng. 169

Dental Disease in its Relation to General Medicine. By J. F. Colyer, L.R.C.P. Lond., &c., and Stanley Colyer, M.D. Lond., &c 170

Diseases of the Nose, Throat, and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D. Third edition 170

Surgery of the Genito-urinary Organs. By J. W. S. Gouley, M.D. 171

Lehrbuch der Chirurgie. Bearbeitet von Prof. Klapp and others. Second edition 171

Allen's Commercial Organic Analysis. Volume V. Fourth edition. Edited by W. A. Davis, B.Sc., A.C.G.I., and Samuel S. Sadtler, S.B. 171

The Diagnosis of Nervous Diseases. By Purves Stewart, M.A., M.D. Edin., F.R.C.P. Lond. Third edition 172

Analyse des Harns, zum Gebrauch für Mediziner, Chemiker und Pharmazeuten, zugleich elfte Auflage von Neubauer-Huppert's Lehrbuch. Bearbeitet von A. Ellinger and others 172

Veterinary Bacteriology: A Treatise on the Bacteria, Yeasts, Molds, and Protozoa Pathogenic for Domestic Animals. By Robert Earle Buchanan, Ph.D. 172

Manual of Psychiatry. By J. Rogues de Fursac, M.D. 173

Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein 173

Tropical Hygiene, for Anglo-Indians and Indians. By the Hon. Surg.-Gen. C. P. Lukis, M.D. Lond., C.S.I., and Major R. J. Blackham, R.A.M.C. 173

The Canada Year Book, 1910 174

The Climate of the Continent of Africa 174

Oedipus 174

Divine Comedy 174

The King to His People 174

Where Do We Come From? Is Darwin Correct? 174

La Peste en Caracas 175

Pocket Notes and Remembrancer for Sanitary Inspectors 175

Health Readings 175

Sport on the Riviera 176

The Quarterly Journal of Medicine. Vol. V 175

The Journal of Vaccine Therapy 176

The Journal of the London School of Tropical Medicine 176

NEW INVENTIONS.

A New Evacuator for Litholapaxy.—(*Illustrated*) 177

LEADING ARTICLES.

THE NATIONAL INSURANCE ACT 178

IMAGINATION IN MEDICAL RESEARCH 179

STATE AND VOLUNTARY SANITARY CONTROL OF WORKSHOPS 180

ANNOTATIONS.

The Epidemiology of Acute Poliomyelitis 181

Hygiene and the Tube Booking-Clerk 182

Acute Phlegmonous Gastritis with Erysipelas 182

The Health of Professor Trendelenburg 183

A Medical Man's Bequest 183

The Etiology of Yellow Fever 183

Drug Architecture and the Organism 184

The Dark and Damp Day 185

The Royal Sanitary Institute ... 185

Sir Thomas Browne and the Witch-Trials: A Vindication 185

PUBLIC HEALTH.

Annual Reports of Medical Officers of Health 187

VITAL STATISTICS:

Health of English Towns 188

Health of Scotch Towns 188

Health of Irish Towns 189

Vital Statistics of London during December, 1911 189

Analysis of Sickness and Mortality Statistics in London during December, 1911 190

SPECIAL ARTICLES.

Royal College of Surgeons of England 176

British Medical Benevolent Fund 177

Sanitary Measures in India 186

The Services: Scale of Fees for Professional Services by Medical Officers in India 191

The Meeting of the Canadian Public Health Association in Montreal.—(*Concluded*) 195

Manchester: Appeal of the Royal Infirmary against Assessment of its Glanydon Premises.—Prosecution under the Post Office Act: Improper Circulars 196

Liverpool: Hospital Sunday in Liverpool.—Death of Mr. James Taylor, F.R.C.S. 196

Bristol and the Western Counties: University Colston Society, Bristol.—Bristol Dispensary.—The Question of Free Medical Treatment of School Children 197

Scotland: The National Insurance Act, the Scottish Central Committee.—Food Adulteration.—Insanity Statistics in Glasgow 198

Ireland: Irish Emigration.—The Women's National Health Association and the Insurance Act 199

Paris: The Will of Professor Lannelongue.—Treatment of the Oriental Boil (Bouton d'Orient) by Methylene Blue 199

United States of America: Crime and Suicide in the United States.—Action by a Typhoid Carrier against the City of New York 200

THE NATIONAL INSURANCE ACT.

The Council of the British Medical Association 202

British Medical Association Reform Committee 202

Two Expositions of the Act 202

Insurance Commissioners 203

CORRESPONDENCE.

The Medical Profession and the National Insurance Act (Dr. Major Greenwood, Mr. Richard Bevan) 192

The Morbid Diatheses (Mr. R. Clement Lucas, Mr. John Fredk. Briscoe) 193

Unicellula Cancri (Dr. Wilfred Watkins-Pitchford) 193

A Prescription for Colitis (Dr. Ninian M. Falkiner) 194

The Action of Radium on Malignant Growths (Dr. H. D. McCulloch) 194

Local Reaction in Tuberculin Treatment (Dr. H. Wm. Godfrey) 194

OBITUARY.

Edmund Downes, M.D. Brux., F.R.C.S. Edin. 203

Deaths of Eminent Foreign Medical Men 204

MEDICAL NEWS.

Society for Relief of Widows and Orphans of Medical Men 177

London (Royal Free Hospital) School of Medicine for Women (University of London) 195

Guardians and District Medical Officers 198

Pass-list of the Examining Board in England by the Royal Colleges of Physicians of London and Surgeons of England 204

Foreign University Intelligence 204

Longevity 204

Oysters and Enteric Fever 204

Presentation to a Medical Practitioner 204

A Surgeon's Honorarium 204

University College, London 205

Donations and Bequests 205

Medical Baths at Torquay 205

Books, &c., received 205

Appointments 205

Vacancies 205

Births, Marriages, and Deaths .. 206

Notes, Short Comments, and Answers to Correspondents ... 206

Medical Diary 208

Meteorological Readings 209

Acknowledgments of Communications received 210

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

ARNOLD:—
Bryce ..... Modern Theories of Diet 6
Cannon..... Mechanical Factors of Digestion 6
Guthrie .... Blood-vessel Surgery .. 6
Howard .... House Surgeon's Vade Mecum 6
International Medical Monographs .. 6
McIntosh & Fildes .... Syphilis 6
Pirrie & Wright.... Practical Anatomy 6

BAILLIERE, TINDALL & COX:—
Bidwell .... Intestinal Surgery 10
Chapin & Pisek..... Diseases of Infants and Children ..... Cover 1
Delafield & Prudden .. Pathology ..... Cover 1
Elder..... Ship Surgeon's Handbook 8
Freyer ..... Enlargement of the Prostate 8
" ..... Urinary Organs 8
Giles ..... Abdominal Operations.. 8
" ..... Gynæcological Diagnosis 8
Ince ..... Latin Grammar of Pharmacy..... 8
Thorne..... Nauheim Treatment of Disease of the Heart. 8
Witkowski.. Fixation of Loose Teeth 8

BALE, SONS & DANIELSSON:—
Bosanquet & Clogg..... Stomach, &c. .. Cover 1
Collum ..... Practice of Anæsthetics ..... Cover 1
Daniel ..... Arthritis 1

BALE, SONS & CO.—(Continued).
Gray ..... General Surgical Technique ..... Cover 1
Jefferys & Maxwell .. Diseases of China Cover 1

CASSELL & CO.:—
Berkeley & Bonney.... Gynæcological Surgery 9
Candy ..... Manual of Physics 9
Luff & Candy Manual of Chemistry .. 9
Morris, Sir M. Diseases of the Skin .. 9
System of Surgery 9
Thomson, StClair .. Diseases of Nose, &c. .. 9
Treves, Sir F. Surg. Applied Anatomy 9
Treves, Sir F., & Hutchinson Surgical Operations .. 9
Whitelegge & Newman Hygiene, &c. 9

CHURCHILL, J. & A.:—
Cripps ..... Cancer of the Rectum.. 10
" ..... Diseases of the Rectum 10
Hurry ..... Vicious Circles in Disease ..... Cover 1

FROWDE AND HODDER & STOUGHTON:—
Ferkart .... Bronchial Asthma 10
Bidwell .... Minor Surgery 10
Despard .... Massage 7
Kirmisson .. Surgery of Children .. 7
McCann .... Cancer of the Womb, &c. ..... Cover 1
Sargent & Russell.... Emergencies of General Practice 7
Sutherland's System of Diet, &c. 7
Whitelocke.. Sprains, &c. 7

GLAISHER:—
Herschell.... Treatment of Duodenal Ulcer ..... Cover 1
Savill ..... Hysteria ..... " 1
" ..... Neurasthenia..... " 1

GRIFFIN & CO.:—
Medical Pocket Book Series 10
West ..... Diseases of the Organs of Respiration 10

LEWIS:—
Binnie ..... Manual of Operative Surgery..... 3
Cooper ..... Sexual Disabilities of Man 3
Gould ..... Practitioner's Medical Dictionary 3
" ..... Student's Medical Dictionary 3
" ..... Pocket Medical Dictionary 3
Lewers..... Diseases of Women 10
" ..... Cancer of the Uterus .. 10
Oliver ..... Studies in Blood-Pressure 3
Powell, Sir R. D. & Hartley.. Diseases of the Lungs, &c. ..... Cover 1
Rawling .... Landmarks, &c. 3
Roth..... Lateral Curvature of the Spine..... Cover 1
Starr..... Hygiene of the Nursery 3
Swanzy & Werner.... Diseases of the Eye.... 3
Woakes .... Deafness, &c. 3

LONGMANS, GREEN & CO.:—
Haig ..... Food Factor in Disease, &c. ..... Cover 1

MACMILLAN & CO.:—
Milligan & Wingrave.. Handbook of Diseases of the Ear .... Cover 1

MURRAY:—
Forsyth .... Children in Health and Disease..... Cover 1

OXFORD MEDICAL PUBLICATIONS..... Cover 1

REBMAN:—
Bing ..... Regional Diagnosis 8
Jolly ..... Microscopic Diagnosis.. 8

SAUNDERS COMPANY:—
Anders ..... Practice of Medicine .. 5
Bonney..... Pulmonary Tuberculosis 5
Cabot ..... Differential Diagnosis.. 5
Kemp..... Stomach and Intestines 5
Saunders' Books ..... Cover 1
Stelwagon .. Diseases of the Skin..... 5

SPRAGUE & CO.:—
Ernst..... Orthopædic Apparatus Guide 10

MEDICAL LIBRARIES, &c.:—
Baker, Birmingham—Book Bargains..... 10
Beasley & Ketley—Stammering 10
Behnke—Stammering 10
Kimpton—Wanted British Medical Journal ..... Cover 1
Matthews Bros.—Wood: Application of Trusses.... 10
Norwood Sanatorium—Hare: Inebriety ..... Cover 1
Squire's Companion 36
" London Hospitals 36

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Birmingham and Midland Eye Hospital 73
Borough of Workington..... 75
Brentford Union 74
Bristol Royal Infirmary 74
Children's Hospital, Sunderland 72
City of London Hospital for Diseases of the Chest 75
Croydon County Borough 74
Croydon General Hospital 72
Eastern Dispensary, Leman-street.... 75
Edmonton Union—Winchmore Hill District 75
Edmonton Union—Waltham Abbey District 75
Essex and Colchester Lunatic Asylum 75
Evelina Hospital for Sick Children .. 73
Gloucester County Asylums 72
Kensington and Fulham General Hospital 75
Kilmarnock Infirmary..... 75
Leeds General Infirmary 73
Leicester Infirmary 73
London County Asylum, Horton 74
Macclesfield General Infirmary 72
Middlesex Hospital 75
National Hospital for the Paralysed and Epileptic 75
N. Lonsdale Hos., Barrow-in-Furness 72
North Staffordshire Infirmary, Hartshill 73
Oxford County Asylum, Littlemore .. 73
Park Hospital for Children 73
Poplar Hospital for Accidents..... 75
Prince of Wales's General Hospital, Tottenham 74
Queen's Hos. for Children, Hackney-road 65
Ransom Sanatorium for Consumptives 75
Royal Cornwall Infirmary, Truro 73
Royal Hampshire County Hospital .. 70
Royal Infirmary and Dispensary, Doncaster 75
Royal Infirmary, Sunderland 75
Royal London Ophthalmic Hospital.. 73
Royal Surrey County Hospital 74
Royal Waterloo Hos. for Children, &c. 74
St. Peter's Hospital for Stone, &c.... 75
Salford Royal Hospital 74
Salisbury Infirmary 74
Scarborough Hospital and Dispensary 72
Sheffield Royal Infirmary 73
Shoreditch and Finsbury Tuberculosis Dispensary 75
Somerset Hospital, Capetown 74
Victoria Hospital for Children, Chelsea 73
Warneford, Leamington, &c., General Hospital 75
Western Dispensary, Westminster.... 75
West Ham and Eastern General Hos., Stratford 74
Worcester General Infirmary 73
Zanzibar Public Health Department.. 74

ASSISTANCIES MEDICAL..... 76

ASYLUMS, HOMES, &c.:—
Anglia, Fleet-street 72
Arnold, Brighton 72
Ashwood House, Kingswinford 68
Association of Medical Men Receiving Resident Patients 72
Barnsley Hall, Bromsgrove 66
Barnwood House Hospital 67
Bishopstone House, Bedford..... 66
Buntingford House Retreat, Buntingford 69
Camberwell House, Peckham-road.... 68
Cheadle Royal 66
Clarence Lodge, Clapham-park 67
Colthurst House, Warford..... 72
Coppice, The, Nottingham..... 67
Crooksbury Sanatorium, Surrey 65
Croydon Mental Hospital 66
Dalrymple House, Rickmansworth .. 69
Dartmoor Sanatorium 69
David Lewis Colony, Alderley Edge .. 72
Dinsdale Park, Darlington..... 67
Ghyllwoods 69
Grove House, Church Stretton..... 67
Grove, The, Catton, Norwich 67
Haydock Lodge, Newton-le-Willows.. 68
Highcliffe Nursing Home 72
Home for Epileptics, Maghull..... 72
Inveredern Sanatorium, Cupar..... 65
Inverurie Lodge Sanatorium, Colinsburgh 68
Kinder-Sanatorium, Arosa 71
Kingsdown House, Box 66
London Fever Hospital 65
London Open-Air Sanatorium, Wokingham 70
Malling Place, Kent 67
Malvern Hydropathic 72
Manor Valley Sanatorium, Peebleshire 65
M.D., Wimbledon 72
Melbourne House, Leicester..... 66
Middleton Hall, Co. Durham 66
Moat House, Tamworth 67
Mount Pleasant, Wanstead 72
Newmains Retreat, Lanarkshire 69
Nordrach in Wales Sanatorium 70
Nordrach-on-Dee, Banchory 70
Nordrach-upon-Mendip Sanatorium .. 70
Northlands Retreat, Wandsworth 69
Northumberland House, Finsbury-pk. 68
Northwoods House, Winterbourne.... 66
Norwood Sanatorium, Ltd. 69
No. 511, L.O., Strand 72
No. 560, L.O., Strand..... 77
No. 874, L.O., Strand..... 72
Osea Island, Heybridge 69
Peckham House 68
Plympton House, South Devon 67
Portsmouth Corporation Mental Hos.. 67
Raeburn Sanatorium, Northallerton.. 65
St. Andrew's Hospital, Northampton. 67
St. George's Retreat, Burgess Hill.... 66
St. Luke's Hospital, E.C..... 66
Sanatorium Clavadel..... 70
Shaftesbury House, Formby-by-the-Sea..... 68
Springfield House Private Asylum, Bedford 67

ASYLUMS—(Continued).
Stocker, Craven-street 72
Stretton House, Church Stretton..... 67
The Grange, Rotherham 67
The Pleasaunce, York 67
Vale of Clwyd Sanatorium..... 70
Villa du Parc 71
Warneford Asylum, Oxford 66
White Hall, South Norwood Hill 65
Wye House, Buxton 67
Yarrow Convalescent Home, Broadstairs..... 68

COMPANIONS:—
No. 546, L.O., Strand..... 76
No. 549, L.O., Strand..... 76

FINANCIAL, &c.—
Equitable Reversionary Interest Soc. 64

HEALTH RESORTS, BATHS, &c.:—
Alexandra Therapeutic Institute 72
Buxton Hydro Hotel..... 71
Leysin, Switzerland 71
Peebles Hotel Hydropathic 72
Smedley's, Matlock 71

HOTELS:—
Eden Hotel, Nervi..... 71
Hotel Belvedere, Bordighera 71
Hotel Metropole, Las Palmas 71
White Hart Hotel, Margate 71

HOUSE & ESTATE AGENTS:—
16, Cowtile-road, Bayswater..... 77
Dunn, Soman & Coverdale, Bishopgate 77
Fredman, Devonport 77
Ley Clark, Wimpole-street 77
Maynard, Bexhill 77
No 547, L.O., Strand..... 77
Owner Bournemouth 77
CONSULTING-ROOMS:—
Elliott, Son & Boyton, Vere-street .. 77
Ley Clarke, Wimpole-street 77
No. 552, L.O., Strand..... 77
No. 553, L.O., Strand..... 77
No. 779, L.O., Strand 77

LIFE & FIRE ASSURANCES:—
National Provident Institution 64
Prudential 64

MEDICAL ACCOUNTANTS, &c.:—
Dacie 76
Turner 77

MEDICAL AGENTS:—
Blundell & Rigby 79
Fieldhall, Limited 79
Manchester Clerical, &c., Association. 79

MEDICAL AGENTS—(Continued).
Manchester Medical Agency 79
Medical Agency 80
Moore & Co. 76
Needes, Herbert 79
Needes, J. C. 80
Peacock & Hadley 80
Reynolds & Branson 78
Scholastic, Clerical, &c., Assoc. 62
Turner 81

MEDICAL SCHOOLS:—
(LONDON.)
West London Post-Graduate College.. 62

NURSING INSTITUTES:—
General Nursing Association..... 64
Hospital for Sick Children, Great Ormond-street 64
Leeds Trained Nurses' Institution 64
London Nurses' Association 64
Male Nurses Temperance Co-operation 64
Mental Nurses' Co-operation..... 64
National Hos. Male Nurses' Assoc.... 64
Nurses' Co-operation, Portland-place.. 64
Registered Nurses' Society 64
St. John's House 44
St. Luke's Hospital, E.C. 64
Temperance Male Nurses' Co-operation 65
The Retreat, York..... 64

OFFICIAL NOTICES:—
City of London Lying-in Hospital 62
Francis Galton Laboratory for National Eugenics 63
King's College..... 62
London Hospital 65
London Post-Graduate Association .. 62
London School of Clinical Medicine .. 65
Medical Graduates' College and Polyclinic 62
North-East Lond. Post-Graduate Coll. 62
Queen Charlotte's Lying-in Hospital.. 62
Queen's College Afternoon Lectures.. 62
Royal Institute of Public Health 63
Royal London Ophthalmic Hospital.. 63
Royal Society of Medicine .... Cover 1
St. Mary's Hospital Medical School.. 63
University of Cambridge..... 63
University of London 63
West End Hospital for Diseases of Nervous System 62
York-road General Lying-in Hospital, Lambeth 62

PARTNERSHIPS & PRACTICES 76

RAILWAY & STEAMSHIP CO.'S
New Zealand Shipping Co..... 64

TUTORS & LECTURERS:—
Gemmell ..... 63 | No. 449, L.O. .. 77
Med. Corres. Coll. ..... 63 | Schnelle 10
Weymouth 62

For Index to Trade and Miscellaneous Advertisements see page 4.

An Address
ON
EXAMPLES OF THE RESOURCES OF SURGERY IN CERTAIN EMERGENCIES.[1]

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MR. PRESIDENT AND GENTLEMEN,—The Hunterian is one of our oldest medical societies, and as Hunter was a London surgeon it seems in the fitness of things that surgery should occupy a prominent place in your yearly programme. The society was founded in 1819, and its first President was Sir William Blizzard, a man evidently of remarkable energy and ability. He was elected President when 76 years old, at 84 he successfully amputated a thigh, at 91 he was himself operated upon for cataract, and a few hours after the operation was bled to 8 oz. In these days most members of our profession who survive to old age, unlike Sir William Blizzard, may echo the lament of the Psalmist, "Collocavit me in obscuris sicut mortuos saeculi."

SOME OBSERVATIONS ON MEDICAL SOCIETIES.

At the jubilee of the society in 1869 an address was given by Henry Fotherby, in which is well described the evolution of the societies of men from the earliest times, and in which the history of the Hunterian Society to that date is given in considerable detail. In that address Fotherby remarked:—

> The success of the society has been *felt* in the experiences of its members, rather than *written* in the minutes of its proceedings. Nothing in the shape of a party or clique has ever been known among its members. May this happy state long continue.

Some common bond of interest is essential to the life of a society: Ratio societatis vinculum. Instinct led the barbarian to unite with his fellow for the mere purpose of support and defence.

> These ends being secured, the religious idea, as innate to humanity, appears to be the next cause of association; and very early do we find a class, society, or caste set apart for the culture of religion, as the Druids, the Augurs, and the Levites. With them dwelt the influence and authority which wisdom and learning ever exercise over ignorance; and to them, in virtue of their supposed influence with the gods, was committed equally the care of souls and bodies and the formation of laws. In the classic systems of Greece and Rome this union of priest and physician was discontinued from the period of the Esculapian institutions, but with the Gothic and other nations it was long maintained.

The Royal Society, founded in 1645, is the oldest of our scientific societies. As an off-shoot from it came the Mathematical Society, founded in 1717; this society existed independently for more than a century, and ended by becoming merged in the Astronomical Society in 1845.

The oldest of our purely medical societies is the Medical Society of London, founded in 1773, and still happily in vigorous and independent existence. Next came a Society for the Improvement of Medical and Chirurgical Knowledge, founded by John Hunter himself, in 1783, which had but a short life. The Royal Medical and Chirurgical Society was founded in 1805.

Two important non-medical scientific societies—viz., the London Institution and the Geological Society—were founded in 1807. Your own society, the Hunterian, was founded in 1819, and after it came the Pathological Society of London, founded in 1846, and numerous other medical societies, most of which are now merged in the Royal Society of Medicine.

THE NATIONAL INSURANCE ACT.

In recent years medical men have had to return to the primitive instinct and form societies, such as the Medical Defence Union, for the mere purpose of mutual support and defence; it is noteworthy that this has been the *last*, and not the first, motive for their association.

A fresh phase in this process is with us now. The British Government has passed a Bill through Parliament which professes to provide *adequate medical attendance* for 15,000,000 people. All medical men know that "adequate medical attendance" for the poor is not provided for by this Act, and that it cannot be so provided unless the Act is amended so as to place the medical service under medical control, which alone can make it a success.

The Act perpetuates by Government sanction the abominable slavery of medical treatment controlled by laymen, and if it is worked as it stands, will fasten the hateful yoke of cheap contract practice on the necks of thousands of medical men, and will reduce numbers of them and their families to penury.

Medical attendance on the poor, as Government service, should receive a fair remuneration like other departments of the Civil Service. There is nothing in the Act about *adequate medical remuneration*. It would be interesting to observe the effect on the legal profession of an Act which would reduce the remuneration of solicitors to a capitation fee of 4*s*. 6*d*. per annum. The leaders of the British Medical Association have invented a new definition of the word "*cardinal*" which is not understood by the rank and file of the profession.

If a government becomes responsible for the medical care of the poor such government care ought to reach a standard approximately like that within the reach of the rich. This the Act does not do. The medical aspect of the problem is purely medical, and any attempt at lay control and inspection of *medical treatment* or benefit is a gigantic fraud on the people, and an intolerable oppression of those engaged in the most self-sacrificing of all callings.

THE ORIGIN OF CANCER.

Fotherby on the occasion to which I have alluded said:—

> There are indications that we may be already on the threshold of grand discoveries which will be equivalent in the field of medicine to those of Newton in physics, by which we may not only recognise the secondary causes of diseases, but deduce the general laws which under these become active, and their correlation with the conditions and laws of health.

Anæsthetics were already discovered, but the work of Pasteur and of Lister was yet to come. We have seen that work and in it the fulfilment of Fotherby's forecast, for its importance to surgery is not less than that of Newton's work to physics.

We are now looking forward to further discoveries, as were the men of Fotherby's time—notably the solution of the cancer problem. You will all have listened to or read the lectures of surpassing interest on cancer recently delivered by a great surgeon and pathologist of our own day; the conclusion arrived at was that the problem was insoluble, for he said:—

> There is one, and only one, explanation of the conduct of the cancer cell—that it has been endowed with that wondrous gift which no man has seen and which no man can understand—the gift of life; and that, owing to that gift, it has become an independent creature, a new creation of living thing. The host in which it dwells has fashioned it out of his own tissues and in the likeness of his tissues, and, to borrow the figurative language of Scripture, the Creator has breathed into it the breath of life, and it becomes a veritable Frankenstein's monster, bent on the destruction of its host. After ages of past and present civilisation, during which searchers and philosophers have sought to explain the origin and nature of life, we have come no further than this, and he who discovers the true origin of cancer will have solved the enigma which has hitherto baffled the searchers and philosophers in all ages and of all countries.[2]

Surely it is true that the normal squamous cell, no less than the carcinomatous squamous cell, has had breathed into it by the Creator the breath of life. Surely the discovery of the intimate nature of tubercle, malaria, Mediterranean fever, tetanus, and other infective diseases did not solve the origin of life, and we may hope that the intimate nature of cancer and its treatment will be discovered without the workers in this field of science being oppressed by the tremendous problem which Sir Henry Butlin supposes must confront them.

No one has given any more satisfying explanation of the origin of life than that found in the Scripture—

> Thou, Lord, in the beginning hast laid the foundation of the earth: and the Heavens are the work of Thy hand.

All who labour to solve the problems of Nature may say with the Psalmist—

> I muse upon all Thy works, yea, I exercise myself in the works of Thy hands.

Hunter was a pathologist, even more than a surgeon, perhaps because the resources of surgery were in his day so limited. He certainly looked to pathology as the foundation for any new departure in surgical practice. In one of his earliest works there occurs a passage which I cannot but

[1] The Oration in Surgery delivered before the Hunterian Society, Jan. 10th, 1912.

[2] THE LANCET, Dec. 2nd, 1911, p. 1539.

contrast with that which I have quoted from Sir Henry Butlin:—

> By persisting in this method of reasoning and attributing everything we are unable to explain to Divine intervention, we block up the gateway and stop up the sources through which come all that adorns life, promotes the arts, and increases the energy and capacity of the human mind. Who has explained the nature of the human body? Who has looked the phenomena of Nature through and through? No one. Many matters lie hidden in obscurity, from which they will not be dragged out without great labour, the united endeavours of many men, and the lapse of a considerable time.

HUNTER'S WORK ON POPLITEAL ANEURYSM.

In Hunter's works—especially in his writings on Inflammation and the Blood—we find clear evidence of his strenuous efforts to elucidate the problems of pathology. From the point of view of surgery, Hunter's name will ever be associated with the cure of popliteal aneurysm by ligation of the femoral artery. In the time of Hunter the only successful treatment of popliteal aneurysm was amputation; the old operation for the aneurysm when applied to the popliteal artery always ended in gangrene and death.

Into this tangle of hæmorrhage, gangrene, and death the genius of Hunter broke with resounding advantage. Notwithstanding the belief of his colleagues at St. George's that the artery was so diseased above the aneurysm that it could not be tied in continuity he affirmed that it was not—his argument was in fact this: if the artery can be successfully tied after amputation, why not tie the artery in continuity where it would be tied in amputation, and thus both save the limb and cure the aneurysm?

TREATMENT OF SURGICAL EMERGENCIES A CENTURY AGO.

A surgeon of to-day looking over the works of Hunter, or his immediate successors, cannot fail to be struck with the small place that surgical intervention then held in the treatment of emergencies. Even 30 years ago the risk attending surgical operations was so considerable that they were delayed as long as possible, whereas now so little is the risk and discomfort attending most operations that surgical intervention has become the method of choice for those affections amenable thereto.

In Hunter's time few conditions were considered as surgical emergencies—that is, as requiring an immediate surgical operation. External hæmorrhage, retention of urine, mechanical obstruction to respiration in the upper air-passages, and obviously depressed fracture of the skull would perhaps complete the list. When an injury to a limb required operation amputation was almost always resorted to; injured viscera were considered beyond surgical aid. Strangulated hernia was mostly treated by futile and dangerous expedients. So limited were the resources of surgery 100 years ago to deal with the lethal consequences of acute disease and injury that the contrast with the present time is amazing.

SOME EXAMPLES OF ABDOMINAL EMERGENCIES: INTESTINAL OBSTRUCTION.

Let us first take, for example, some of the emergencies of abdominal surgery. So recent is our knowledge of the proper treatment of intestinal obstruction that I myself remember the first case in which a median incision was made at St. Thomas's Hospital to discover the site of obstruction before the intestine was opened, the universal practice hitherto having been blindly to perform left lumbar colotomy, which, of course, in many cases was entirely useless.

Cases of acute obstruction are always with us.

CASE 1.—Some years ago a woman, aged 45 years, came under my care with an umbilical hernia of the size of a cocoanut. She had been vomiting, and had had acute pain for four days. Several attempts had been made to reduce the hernia by taxis. When I saw her she was very ill, and the odour that permeated the skin made it obvious that the intestine in the hernia was gangrenous. At the operation 12 feet of ashy grey and black, gangrenous small intestine were exposed, of which 6 feet had been returned by the taxis into the abdominal cavity. The gangrenous mass was cut away 6 inches on each side of the limit of dead tissue, through apparently healthy intestinal wall. The ends were brought out through the wound, and the patient was infused and stimulated. I intended to perform an anastomosis directly the condition of the patient justified the measure. She lived five days, but never rallied sufficiently for a second operation to be attempted. Food was ejected through the proximal opening in the bowel almost as soon as it was swallowed; the only nourishment that was retained for any length of time was a mixture of chopped oysters and cream.

At the post-mortem examination it was found that the proximal opening was only 12 inches from the distal end of the duodenum, and that both ends of the intestine were gangrenous for 2 inches from the line of section. It was, therefore, clear that at the operation I had not gauged correctly the full extent of the gangrenous process. This case is a good example of the danger attending the prolonged use of taxis.

CASE 2.—Again, a man, aged 30 years, of considerable muscular development, was admitted into St. Thomas's Hospital under my care about 20 years ago in a pulseless condition, with a right strangulated scrotal hernia. He had been in severe pain for five days and had been constantly vomiting. When he was brought to the theatre no pulse could be detected in the carotids, and only a feeble flicker could be heard over the heart with the stethoscope. No anæsthetic was necessary, the man seemed like one already dead. While I dealt with the hernia, a vein was opened in the arm and saline solution and brandy infused; the proportion of brandy used was one ounce to one pint of saline solution. By the time eight pints of this mixture had been slowly infused the pulse was full and bounding in all the arteries, and the man no longer seemed dead, but was so drunk and obstreperous that five men were required to hold him down.

Another instructive illustration of obstruction is the following:—

CASE 3.—A man, aged 21 years, was admitted to St. Thomas's Hospital two months ago. He had had very acute pain and vomiting for 36 hours and had previously for a long time suffered from what was called indigestion. The abdomen below the umbilicus was very much distended, there was shifting dulness in the flanks, and the liver dulness had disappeared. At the operation an acute volvulus of the last 2 feet of the ileum was discovered. This was extremely distended, black, and gangrenous. The distended gangrenous volvulus had forced the rest of the small intestine, which was bright red in colour, into the upper part of the abdomen, hence the obliteration of the liver dulness. The man seemed to be doing well for 26 hours, and then failed rapidly and died two days after the operation.

It is to be noted that an acute volvulus seen early may be suspected from the local distension it produces, and that it is amenable to immediate surgical intervention.

PERITONEAL INFECTION.

Again, think how recent is our knowledge of the rational treatment of abdominal disease and injury. Two thousand years ago Celsus wrote:—

> Whenever there is an injury from which survival is possible the immediate indications are two: to see that neither profuse hæmorrhage nor inflammation terminates life.

These indications are still true, but the means of preventing inflammation are a quite recent acquisition. We may now add that the signs which should lead us to diagnose a grave intra-abdominal injury, and therefore to operate, *are not, and they ought never to be, the signs of peritonitis.* Acute abdominal infections are all preceded by a stage in which the disease is purely local and can be ablated or rendered harmless by a simple operation.

Cases of peritoneal infection are now amenable to prompt operation as the following cases show. Similar instances could no doubt be related from the experience of anyone in active practice.

CASE 4.—A carman, aged 20 years, was admitted three days after having been taken ill with pain in the abdomen, vomiting, fever, and constipation. On admission the abdomen was slightly distended, rigid, tender, and motionless on respiration. Temperature 101° F., respirations 40, pulse 120. No tumour felt through the abdominal wall or per rectum; shifting dulness in the right flank. Immediate operation through the right rectus. The abdominal cavity was full of thin pus and all the intestines were bright red. The appendix was gangrenous and was removed. The pus was sponged away from all parts of the abdomen and drainage provided for. Saline solution was infused into the veins and pituitary extract injected hypodermically. On being put back to bed he was propped up and continuous saline infusion per rectum arranged for. Pain was relieved by omnopon and 30 c.c. of anti-colon bacillus serum administered. The patient made good recovery.

CASE 5.—Again, a soldier, aged 37 years, was admitted with a nine months' history of indigestion and a 17 hours' history of acute illness, which commenced with acute pain in the epigastrium. He had vomited, was breathing with difficulty, and was thirsty. The tongue was foul and the pulse quick. The abdomen was full, tender, and scarcely moved at all with respiration. No tumour was felt, the liver dulness had disappeared, and there was shifting dulness in the right flank.

Operation.—On incising the abdominal wall a great quantity of greenish fluid, gas, and stomach contents escaped. A hole of the size of a threepenny-piece was found in the stomach wall near the pylorus. The opening in the stomach was closed. As the stomach contents were widely distributed throughout the abdominal cavity and pelvis, it became necessary to extend the incision far below the umbilicus. The abdominal cavity was cleansed with large quantities of saline solution and then mopped dry, and the operation completed in the usual way. The patient made a good recovery.

In perforated gastric ulcer, when the opening in the stomach is large, there may be no external vomiting, the whole gastric contents being, as it were, vomited into the peritoneal cavity. In this case all the small intestine was red and inflamed. It is of supreme importance in all cases of perforation to operate before the onset of peritonitis; as in injury so here, the signs which should lead us to operate are not, and never ought to be, the signs of peritonitis. This patient has been well since his convalescence from operation. It is to be noted, then, that a gastro-enterostomy is not always necessary in the treatment of perforated gastric ulcer.

CASE 6.—Many years ago a barmaid was admitted to St. Thomas's Hospital with a perforated gastric ulcer of four days' duration. The perforation had occurred in the early morning when the stomach was empty; from that time until admission she had swallowed only neat gin. At the operation the small intestine was floating in gin; no peritonitis was found. She made an easy and rapid recovery. If you want to give your perforated gastric ulcer cases anything by the mouth, I therefore recommend to you the virtues of neat gin.

ACUTE APPENDICITIS.

The commonest illustration of an acute abdominal inflammation is acute appendicitis. On this subject Leguen well said:—

> Ask any surgeon, turn over the pages of any medical journal, and you will come across instances of those distressing cases where operation done too late has proved powerless to arrest the progress of lesions which have become too extensive. The prospect of spontaneous recovery and of medical treatment is a *decoy* to rely upon which is to be led into a snare; when once an appendicitis has commenced, whatever may be its aspect, we never know what it will become; and since the patient is now in any case condemned to operation at some time or other he may as well be assured of its benefits at once.
>
> To be quite just, opportunists—I mean opportunist surgeons—do not restrict themselves to systematic inaction. They have a lively dread of aggravation and do not abandon the patient to himself or even to medical treatment. On the contrary, they exercise a constant and minute supervision, they themselves see the case twice a day, and twice a day they examine the iliac fossa and pay attention to the pulse, the temperature, and the aspect of the patient. They are quite ready to intervene the moment that any indication of aggravation arises. They maintain that in this way they can forestall peritonitis or septicæmia.
>
> This line of conduct at first sight seems altogether rational. But in appendicitis all is deceptive and the most rigorous supervision may be found at fault for three reasons—(*a*) Because in the course of appendicitis there are often treacherous periods of calm; (*b*) because aggravation is sometimes so rapid as to derange all measures of precaution; (*c*) lastly, because the symptoms which reveal this aggravation are neither constant nor reliable. Even with the most rigorous supervision temporising exposes the patient to risk of irreparable damage. For some patients who have got well with medical treatment there are others who have died victims of this same medical treatment and of temporising.
>
> I hold, then, as injurious this practice of applying medical treatment in order to wait, watch, and operate should occasion arise. I have often regretted operating too late, but I have never had any occasion to repent of having operated too soon; early operation does away with all the dangers of temporising.

CASE 7.—The case of a girl aged 18 years, a near relative of mine, is an apt illustration. I saw her at 2 P.M. on a certain day last February. She had remained in bed during the morning, as she had been unable to sleep in the night and was not feeling well. When I saw her she had been sleeping and was drowsy, the face was flushed, there were uneasy sensations in the abdomen, the temperature was 100° F., and the pulse 90. I did not visit her again until 7 P.M., when I found the right side of the abdomen tender and moving irregularly with respiration. The drowsiness had persisted, the pulse was 110, and the temperature 101°. At 9 P.M. the intensely inflamed appendix was removed by Mr. G. H. Makins; there was already free fluid in the abdomen.

Would this case have been well treated by an opportunist surgeon? Would she have survived had the operation been deferred until the next day? The toxic infection in this case was the symptom which appeared to me the most grave.

This grave symptom, toxæmia, is also illustrated by the following case.

CASE 8.—Four weeks ago, about 6 P.M., a girl, aged 14 years, was brought to my house on her way home from a school on the south coast. Six weeks previously at the school she had had an attack of appendicitis with fever, vomiting, and abdominal pain, from which it was thought she had completely recovered. The last night at school she had not slept, and had again felt some pain in the abdomen. She had said nothing of this lest she should be kept at school. During the railway journey to London she had suffered from abdominal pain and nausea, and her mother said that she had not spoken a word. When I saw her she was drowsy, the face was flushed, and the tongue thickly furred; temperature 100° F., pulse 106. Decided tenderness over the right iliac fossa, and the muscles of this region remained immobile during respiration. Operation same night; appendix nearly gangrenous, free fluid in the abdominal cavity. For ten days after the operation the toxæmia continued, the symptoms being drowsiness without sleep, temperature 100°, pulse 100, very furred tongue, septic roseola of face and trunk, constipation, thirst, nausea, and vomiting. The vomit was small in quantity, and its odour was very foul. During this time she took only soda-water and repeated small doses of calomel.

Was I right in operating at once? Or would it have been better had the patient fallen into the hands of an opportunist surgeon? Other acute abdominal conditions which must be treated on similar principles are perforation of typhoid ulcer, duodenal ulcer, acute cholecystitis, and some forms of pancreatic disease.

Those who have visited Freiburg cannot fail to be struck with the great addition to our resources for dealing with the emergency of foreign bodies in the œsophagus and air passages that is afforded by the methods of direct bronchoscopy and œsophagoscopy.

ABSCESS OF BRAIN.

As an example of infective disease within the skull abscess of brain may be given. Operation should never be deferred when once the diagnosis is made, or is probable. I have known instances in which operation has been arranged for the next day, but the patient has died in the night.

CASE 9.—A man, aged 48 years, was admitted to hospital with chronic otorrhœa on the right side. He had lost a son a year previously from cerebellar abscess. The patient was a gardener, and said that for three weeks he had had slight headache and had once vomited. His main complaint, however, was that he had lost the sense of smell, being unable to distinguish in this way between roses and violets. On examination the right pupil was found to be stabile, and the right optic disc blurred. Operation forthwith. A large abscess in the right temporo-sphenoidal lobe was drained through its stalk, which was adherent to the diseased tegmen tympani. Rapid convalescence; no hernia cerebri; recovery of the sense of smell.

MOIST GANGRENE OF FOOT.—COMA.

Moist gangrene of the foot associated with glycosuria, and sometimes also with albuminuria, is a very dangerous disease, but is not always fatal. I have had more than one patient under my care with gangrene of the foot with these complications in whom amputation through the thigh was followed by recovery and the disappearance of both sugar and albumin from the urine. In such cases the urinary condition must be looked upon as secondary to the gangrene.

Coma, as we all know, occurs in patients with sugar in their urine, and it may follow some slight operation, such as an incision, and it always seems a hopeless and inaidable state, but on one occasion, many years ago, I succeeded in bringing such a patient back to consciousness before death ensued. The patient was bled from one arm to about a pint and at the same time saline infusion was commenced in the other arm. This was continued for several hours until nearly 20 pints of saline solution had been infused. The patient

regained normal consciousness for about 18 hours and during that time was quite competent to sign a will. Before the infusion commenced a soft catheter was passed into the bladder. It is very remarkable that at the conclusion of the infusion there was no urine in the bladder and none had escaped during the infusion. When the coma returned a second infusion had no effect. Similar treatment was recommended for the uræmia of Bright's disease by my late teacher, Dr. Charles Murchison.

CALCULOUS ANURIA.

Another emergency, of which not all surgeons have had experience, is calculous anuria. The suppression of urine comes on suddenly. It may remain absolute. I have had one case of this sort under my care.[3]

It is very remarkable that in most such cases, no matter how complete the suppression may be, the patient scarcely seems to suffer during the first seven or eight days, except perhaps from insomnia, slight nausea, and some failure of muscular strength. At the end of that time manifest symptoms of the effect of retained poisonous matters on the system arise and death occurs two or three days later. This is the usual history of calculous anuria which the surgeon must interrupt by operation at as early a stage as is possible. The modern methods of investigation will probably enable him to operate with much more confidence than was possible 20 years ago.

In calculous anuria the condition usually present is obstruction of one ureter and reflex inhibition of secretion in the other kidney; in some cases the other kidney is disorganised from old-standing disease. In either case operation should be performed upon the kidney last obstructed, to which the site of pain or of renal tenderness may be a guide.

Some remarkable recoveries from this condition have been recorded.

CASE 10.—Duret was called to a medical practitioner who had a second attack of calculous anuria a few days after he had spontaneously recovered from a first. The patient was much prostrated, and while Duret was present he had violent convulsions, the face became cyanosed, and the pulse small and irregular. Nephrotomy was done at once; no anæsthetic was required. Two large drainage-tubes were placed in the renal pelvis. During the night urine soaked through the dressing, and normal micturition commenced the next day. The patient recovered and resumed practice.

Chevalier performed nephrotomy on a woman, aged 63 years, on the fourteenth day of anuria; the patient was semi-comatose and her temperature two degress below normal. She recovered.

RENAL HÆMORRHAGE.

CASE 11.—Many years ago a costermonger, aged 45 years, tall, thin, and weatherbeaten, was admitted to St. Thomas's Hospital bleeding freely from the urethra. He had never before had any illness. The bleeding continued in spite of all measures taken to arrest it. It was obviously coming from the kidney, for numerous long clots, casts of the ureter, were passed. The right kidney, though not enlarged, was tender. By the fifth day he had become very anæmic and weak. An incision was made in the right loin; on drawing the kidney out through the wound it appeared healthy. On incising the pelvis it was found full of clot; this was removed. No angeioma or calculus was found. No further bleeding recurred and the man rapidly convalesced. In a week he left the hospital because I would not allow him to have a pint of brandy a day. It turned out that this man was a prince of costermongers; he owned 40 barrows, and he told me that as he was out in all weathers, by night and by day, he allowed himself a pint of brandy daily. I have never seen him since.

INTERNAL HÆMORRHAGE.

Surgical emergencies now cover a very wide field and a treatise, not a lecture, is required for their discussion. I have time to relate only a few more examples of emergency surgery.

As the study of inflammation is the foundation of pathology, so the surgery of the blood-vessels is the foundation of surgery. The principle of the treatment of hæmorrhage is that the bleeding vessel must be found at the site of injury and there tied or otherwise effectually secured. This was long practised in external hæmorrhage before any attempt was made to deal with internal hæmorrhage in the same way. Ligation of an artery in its continuity at some distance from the injured spot is only on rare occasions justifiable. Since the discovery that the great arteries may be successfully sutured it is no longer always necessary to destroy their continuity when wounded.

External hæmorrhage I must pass by, but I will cite one or two examples of internal hæmorrhage. The arrest of internal or concealed hæmorrhage is one of the great triumphs of modern surgery. Let us take a few examples from among many available.

Hæmorrhage into the abdominal cavity in large quantity occurs commonly from one of four conditions—ruptured tubal gestation, and rupture of the liver, spleen, or mesentery. The bleeding is rapid and profuse, sometimes so much so that death occurs before anything can be done, but in some cases a few hours are allowed during which life can be saved.

RUPTURED TUBAL GESTATION.

Ruptured tubal gestation is one of the commonplaces of ordinary practice. These cases sometimes come into the general surgical wards as cases of peritonitis. There is generalised tenderness over the abdomen which has come on so rapidly since the commencement of the illness that, as Cullingworth pointed out, it cannot be due to inflammation. There are the usual signs of hæmorrhage, but this superficial tenderness is the one sign I wish to emphasise.

How simple is the treatment! An abdominal incision is made, blood and clots gush out, the hand is introduced through a mass of clot, the fingers seize the ruptured bleeding tube, and so arrest the hæmorrhage. At the same moment saline infusion is begun in the vein of the arm, for it is futile to practise infusion while the injured vessel is still unclosed.

RUPTURED SPLEEN.

Take again a case of ruptured spleen such as the following:—

CASE 12.—A boy, aged 10 years, fell through a height of about 10 feet on to some large stones against which he struck his left side. When seen he was pale, pulse 130, and temperature 100·8° F. He was very restless, respiration thoracic, shallow and quick, alæ nasi moving. Abdomen distended and immobile; no clear resonance anywhere, so that it could not be ascertained whether or not the dulness in the loin disappeared on turning the patient over on to the other side. Immediate operation found the belly full of blood and the spleen completely torn across. The pedicle was seized and the ruptured spleen removed; the clots were cleared away and the wound closed. The patient made a good recovery.

HÆMORRHAGE FROM THE HEART.

No more formidable example of thoracic hæmorrhage can be chosen than that of hæmorrhage from the heart. Ovid[4] said: "By no resource can wounds of the heart be healed"; and Billroth, only a quarter of a century ago, wrote: "Let no man who hopes to retain the respect of his medical brethren dare to operate upon the human heart." Yet since Billroth's time more than 150 cases of attempted suture of wounds of the heart have been recorded with 30 to 40 per cent. of recoveries. Schnitzler's case is a good example:—

CASE 13.—A male, aged 16 years, attempted suicide by stabbing himself with a large pocket-knife over the heart. When seen there was a wound about 1½ cm. long near the left nipple; there had not been much external escape of blood, but the patient was blanched and had a feeble and quick pulse. About three-quarters of an hour after the injury morphia was given hypodermically and the patient placed under chloroform. The chest was opened by enlarging the wound and removing the fifth costal cartilage up to the sternum. The left pleura had been wounded by the stab, and air and blood escaped from it. About 3 cm. of the fourth costal cartilage was then removed, and a second incision made at right angles to the first. A transverse wound was found in the pericardium. This was enlarged and held open; a wound of the right ventricle

[3] This condition was first treated by operation by Mr. Lucas at Guy's, October, 1885.

[4] "Sanabit nulla vulnera cordis ope." Ovid was a sentimental fellow, not a surgeon, and he may have been referring to those wounds of the heart which were no doubt as frequent in his day as in ours, but which no surgeon inflicts and which the art of surgery is powerless to cure.

near the septum was disclosed. It was plugged with a finger of the left hand and closed by silk sutures. The pericardium was cleared of clots and then sutured; the pleura was drained. The patient afterwards had pneumonia on the right side and empyema on the left, for which latter the usual operation was performed and he made a good recovery.

In 1882 Bloch, of Berlin, studied in animals the healing of wounds of the heart and so laid the foundation of cardiac surgery. The first successful suture of a wound of the heart was done by Rehn in 1897. Not only stab wounds but gunshot wounds of the heart have been successfully operated on. Dupont collected 31 cases: in 11 death was immediate, so that nothing could be attempted; in 20 operation was done, and 8 survived the immediate effects of the operation.

WOUND OF PULMONARY ARTERY.

In the following case, reported by Mauclaire, a wound of the pulmonary artery was found.

CASE 14.—A male, aged 17 years, had been stabbed with a triangular file. There was a wound in the third left intercostal space, not bleeding externally. The cardiac dulness was much enlarged, and there was pneumothorax on the left side. On operating, air and blood were found in the left pleura. There was a wound in the upper part of the anterior surface of the pericardium corresponding to that in the skin. On enlarging the pericardial wound, a wound in the pulmonary artery was found. The edges were seized with Kocher's forceps and the wound was closed with three perforating sutures. The patient bore the operation well, but hæmorrhage into the thorax recurred next day, and the patient died. The condition of the wound in the artery was not ascertained.

REMOVAL OF CLOT FROM PULMONARY ARTERY.

Perhaps the most astounding instance of vascular surgery is the removal of clot from the pulmonary artery. This was done by Trendelenburg.

CASE 15.—Trendelenburg's patient was a man, aged 45 years, in the early stage of tabes, who slipped and fractured his left femur. One day about a month after the accident he had a slight rigor, and a quarter of an hour later he had sudden dyspnœa and cyanosis. For 10 or 15 minutes he seemed to improve, and then suddenly got so much worse that death was evidently imminent. In this emergency an attempt at surgical relief was made.

The pleura was opened at the level of the second rib, and through the pleura the pericardium was opened at the level of the third rib; the aorta and pulmonary artery were held up with a curved sound. These vessels no longer pulsated, and only slight and irregular contractions of the heart were to be seen, and the breathing ceased almost directly. The pulmonary artery was compressed by traction on the sound, an incision was rapidly made in the vessel, and the wound dilated. With a polypus forceps a thrombus 34 cm. long was extracted. The forceps was again introduced three times in rapid succession, and three other smaller thrombi brought away; after this came fluid blood.

Tetanic twitchings of the body muscles showed the urgent need of oxygen for the brain. The lips of the wound in the pulmonary artery were held together with forceps, the constriction of the aorta and pulmonary artery was removed, and artificial respiration was commenced. Natural breathing soon was resumed, and the pulsation of the aorta and pulmonary artery at once recommenced. The wound in the pulmonary artery was sutured. Troublesome bleeding occurred from the internal mammary artery. Before closing the external wound the Roth-Dräger apparatus was applied to get rid of the pneumothorax.

On recovery from the anæsthetic the patient was breathing fairly quietly, but the pulse, though fairly strong, was 120–140. Until the next morning the patient seemed to be doing well. From that time the condition became gradually worse, and death occurred 37 hours after the operation.

At the necropsy a thrombus about 5 cm. long was found in the left branch of the pulmonary artery, and in a small branch of the right pulmonary artery was another small clot. The wound in the pulmonary artery was securely closed. There was no blood in the pericardium. In the left pleura was a considerable quantity of fluid blood, the greater part of which had apparently come from a secondary hæmorrhage from the internal mammary artery, which had not been perfectly secured.

Trendelenburg says:

> The necropsy left no doubt that the emboli came from the right femoral vein. Probably they entered the pulmonary artery in three divisions. The slight rigor with which the attack began was caused by a small embolus like that found at the necropsy in one of the minor divisions of the right pulmonary artery; then came larger clots which possibly came from the iliac vessels. These cut off a considerable area of the lung from the pulmonary circulation, and led to the first severe attack of dyspnœa, heart weakness, and anxiety. Some improvement took place in these symptoms, perhaps because a particular disposition of the emboli allowed the increased heart's action to send blood to more of the pulmonary capillaries. Lastly, came the long thrombus which almost completely blocked the main trunk. The closure was not absolute when the operation was commenced, for had it been so pulse and respiration would have ceased earlier. From the time when the respiration suddenly became worse to the moment of incision of the pulmonary artery ten minutes only elapsed.

When I was in Leipzig Professor Trendelenburg kindly demonstrated at my request on the dead body the method of operation. I have practised this operation on the cadaver but have not done it on the living. I show you Trendelenburg's instruments. It has been found experimentally that the aorta and pulmonary artery must not be obstructed for more than a minute and a half, but I found that in the post-mortem room 40 to 45 seconds is ample time in which to complete the manipulation. The pleura can be pushed aside and need not be opened.

The progress of thoracic surgery is wonderfully illustrated by Trendelenburg's operation. The formidable complications barring advance in this region of the body have been the occurrence of pneumothorax and collapse of the lung. In the future thoracic surgery will be set free from these dangers. Willy Meyer, for example, has successfully resected experimentally the intrathoracic portion of the œsophagus in a chamber in which it was possible to operate either under positive or under negative differential pressure or under a combination of the two; and ere long we may hope that surgery will be as useful in disease or injury of the lung and heart as it is in like conditions of the abdominal organs.

INTRACRANIAL HÆMORRHAGE.

In the head the question of the treatment of hæmorrhage is not so much one of securing a bleeding vessel as one of relieving pressure on the brain and allowing the extruded blood to escape. The amount of an intracranial hæmorrhage, viewed as mere loss of blood, is but seldom formidable.

The treatment of the intradural hæmorrhages of the newly born is one which has not, as yet, very freely permeated the profession, but it is of great importance, for if these infants survive they must be the victims of palsy, epilepsy, or mental defects. The treatment by craniectomy has been shown by Harvey Cushing to be very satisfactory. The diagnosis in characteristic cases is not difficult. Inability to suck, post-natal asphyxiation, a bulging fontanelle without pulsation, convulsions, unilateral palsy, subconjunctival hæmorrhage, and proptosis oculi were the most prominent symptoms in Cushing's cases.

In some cases of ordinary cerebral apoplexy I think the immediate danger to life might be averted by lumbar puncture or repeated lumbar puncture. The cerebral hæmorrhage is associated with an increase of cerebro-spinal fluid. In a recent experience I withdrew on two occasions 1½ oz. of blood-stained fluid, on the first occasion with marked relief of symptoms; headache and restlessness disappeared and five hours' sleep was obtained.

In heat apoplexy, which may be described as a hæmorrhagic meningitis serosa, lumbar puncture may be curative, as the following case shows.

CASE 16.—A man, aged 53, in one of the hottest days of July, when exposed to the sun, became unconscious suddenly. With care and ice to the head he had recovered three days later, but complained a good deal of headache as he lay in bed. The next day a relapse took place, and on the fifth day he was again completely unconscious. On the sixth day I saw the patient with Mr. A. S. St. John, of Eltham. He was completely comatose, Cheyne-Stokes breathing, temperature 104° F., pulse 60, urine and fæces passed in bed. Lumbar puncture was done and 1½ oz. of pink fluid were withdrawn. In 12 hours consciousness had completely returned. Four days later a relapse took place and complete coma again supervened. Lumbar puncture was successful a second time. Consciousness returned in a few hours and the patient from this time made an uninterrupted recovery.

In apoplexy with resultant paralysis and other symptoms it has been shown that the capsular clot can be removed, or

rather removes itself by extrusion, when an incision is made in the brain. Such symptoms as hemianæsthesia, aphasia, word-blindness, &c., have cleared up after removal of the clot.

ARTERIO-VENOUS ANASTOMOSIS.—SUBCLAVIAN ANEURYSM.

The wonderful work of Carrel and Guthrie has made it possible to anastomose an artery with a vein. Gluck was the first successfully to perform arterio-venous anastomosis in man. Until this advance was made the emergency of senile gangrene usually necessitated amputation through the thigh. Now the femoral artery may be anastomosed with the femoral vein, and the venous system thus made to carry arterial blood to the foot. In this way the gangrene may be arrested and the limb saved.

In conclusion, let me show you a picture of a patient whose innominate artery I successfully tied two months ago for the relief of subclavian aneurysm. What would John Hunter have given to be present at this operation?

THE FUTURE OF SURGERY.

The science and art of surgery in my lifetime have achieved what in my student days would have been looked upon as but the most magnificent promises of impossibilities. Kindled by the past, we can look forward with confidence. In groping our onward way "upon the bank and shoal of time" to clearer knowledge in the mysterious world of disease, let us listen a moment to, and derive inspiration from, the words of Paracelsus:—

> I go to prove my soul!
> I see my way as birds their trackless way.
> I shall arrive! what time, what circuit first,
> I ask not: but unless God send his hail
> Or blinding fireballs, sleet, or stifling snow,
> In some time, His good time, I shall arrive:
> He guides me and the bird. In His good time!

Can we venture to forecast the future of surgery? Can we

> Look unto the seeds of time
> And say which grain will grow and which will not?

Surely the ancient prophecy that "many shall run to and fro, and knowledge shall be increased" is being fulfilled in our own time and will continue to be fulfilled in the time to come. "There are many events in the womb of time which have yet to be delivered."

> For these things tend still upward, progress is
> The law of life, man is not Man as yet.

Researches INTO SENSORY DISTURBANCES FROM CEREBRAL LESIONS.*

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(Concluded from p. 83.)

III.—SENSORY DISTURBANCES PRODUCED BY LESIONS OF THE CEREBRAL CORTEX.

In describing the effect of a cortical lesion upon sensibility we shall proceed exactly as with lesions of other parts of the nervous system. All such expressions as "cutaneous sensation" and "light touch" will be strictly avoided, and we shall deal as far as possible with measured stimuli only. Thus, for instance, we shall not speak of "deep sensibility" as preserved or lost, but shall give the exact stimuli used and the form of response they evoked.

1.—GRADUATED TACTILE STIMULI.

(Von Frey's Hairs and Pressure Æsthesiometer.)

Lesions at lower levels of the nervous system produce, on the whole, forms of altered sensibility which react with remarkable constancy to graduated stimuli. A touch of definite intensity, if sufficiently strong to evoke a sensation, will do so in a large proportion of instances, while some less intense stimulus will cause no sensation of any kind. Somewhere between these two we are justified in placing the threshold for tactile sensibility.

But the characteristic change produced by a cortical lesion consists essentially in a want of constancy and uniformity of response to the same tactile stimulus. Increasing the stimulus does not necessarily improve the patient's answers, and in many cases a threshold cannot be obtained. On attempting to obtain a maximum threshold on the affected hand we meet with the same curious irregularity of response that has hampered all who have attempted to use graduated stimuli in such cases; the patient seems to be untrustworthy. At one time he responds to a hair of 21 grm./mm.^{2}; at another even 100 grm./mm.^{2} produces no effect. Not only are his answers apparently incalculable, but not infrequently he responds when he has not been touched.

This irregularity has led most observers to reject all graduated stimuli and to adopt some other form of tactile stimulation, such as rubbing with the finger or with cotton-wool, to which the answers are more uniform. But in this irregular response to graduated tactile stimuli lies the key to the sensory disturbance produced by lesions of the cerebral cortex.

We have modified the method of examination in the following manner so as to bring out the true nature of this phenomenon. A hair is selected producing a stimulus just above the maximum threshold, to which the normal hand reacts with constancy when it is applied 16 times in the minute. If the same hair is applied in the same manner to a corresponding part of the affected hand the responses are irregular and wanting in uniformity. Then more powerful hairs are used up to those exerting many times the pressure. Still the response remains irregular; in fact, the answers may be less accurate with the more powerful stimulus than to the finer hairs. But further stimulation with the hairs of lower grade does not of necessity materially reduce the proportion of correct answers. The irregular response to the more powerful hairs cannot, therefore, have been due to fatigue alone.

We are, therefore, compelled to use some other form of measurable stimulus, and choose the pressure æsthesiometer, in which measured weights may be brought to bear on a surface of 3 mm. in diameter. In one of our cases the normal hand responded constantly to a pressure of 2 grm., the minimum weight we could apply with this apparatus. But on the abnormal hand the answers showed the same remarkable tendency to irregularity that was present when it was stimulated with graduated hairs. Here it is impossible to say that any tactile threshold can be obtained in the sense usually given to the term. A part that was sensitive to a hair exerting a pressure of 0·36 grm. was not constantly sensitive to a pressure of 30 grm.

This uncertainty of response is not the only peculiarity met with in examining the affected part with measured tactile stimuli. Fatigue is induced with unusual facility, and a part that has responded in the characteristic manner to one of the less powerful hairs may fail altogether to respond to 100 grm./mm.^{2} This is, however, an extreme reaction seldom, if ever, seen in uncomplicated cortical cases.

Another disturbing factor in the response to graduated tactile stimuli is the occurrence of hallucinations, or replies that are not the direct sequel to a stimulus. We believe that this tendency to hallucinate is not due to any general untrustworthiness on the part of the patient, but is another aspect of the irregular response characteristic of cortical loss. On one occasion a patient gave so many hallucinatory answers to graduated hair-stimulation of the affected hand that all testing became impossible. But in spite of this "untrustworthiness" the answers obtained from the normal hand and from the soles of both feet were excellent, and in each of these parts a perfect threshold could be worked out.

Many of our patients are highly intelligent; if they are asked to describe their sensations at the time they are hallucinating, introspection leads them to remarkably similar conclusions. They start by saying that a sensation from the affected part differs from that evoked by the same stimulus on the normal hand or foot. The hair seems to remain in contact with the skin, and after a series of touches a continuous sensation is produced. Upon this continuous sensation each consecutive touch may or may not produce

* These Researches appear in complete form in Brain, vol. xxxiv., 1911.

that additional change recognised as a fresh contact. But at times the sensation interpreted as another contact may arise without actual stimulation, and sometimes it may even recur several times. These hallucinations are, in fact, the direct consequence of that persistence of sensation so frequently a feature of the changes produced by a cortical lesion.

Frequently tactile sensibility is less grossly affected by a cortical lesion. The response may still be irregular and the sensation of contact may persist, but with stronger stimuli the proportion of replies increases until, perhaps, every contact may evoke an answer. Under such circumstances the affected part may exhibit unusual signs of fatigue, although general attention, shown by the response on the normal side, has undergone no diminution. Moreover, the sensations of contact tend to persist, and hallucinations may break an otherwise perfect series of replies.

Whenever a tactile threshold can be obtained, sensibility as a whole is comparatively slightly affected. No form of sensory appreciation is completely lost, and some approximation to a threshold can be discovered with other graduated tests, such as the compasses.

We can sum up the conclusions to which we have arrived as follows:—

1. A cortical lesion may reduce the accuracy of response, from the affected part, to graduated tactile stimuli. The form assumed by this defective sensibility differs from that produced by lesions at other levels of the nervous system. The affected part may respond to the same graduated hair as the normal hand; but this response is irregular and uncertain. Increasing the stimulus may lead to no corresponding improvement, and even the strongest tactile hair may occasionally evoke less certain answers than a hair of much smaller bending strain. Moreover, a touch with the unweighted æsthesiometer may be as effective at one moment as the same instrument weighted with 30 grm. at another. In such cases no tactile threshold can be any longer obtained.

2. This irregularity of response is associated with persistence of the tactile sensation and a tendency to hallucinations of touch. Where the sensory defect is not sufficiently gross to abolish the threshold, persistence, irregularity of response, and a tendency to hallucinate may still disturb the records.

3. In all cases where tactile sensibility is affected, whether a threshold can be obtained or not, fatigue is induced with unusual facility. Although the patient may cease to respond to tactile stimuli over the affected part in consequence of fatigue, his answers will remain as good as before from the normal parts. The fatigue is local and not general.

4. With stationary cortical lesions, uncomplicated by states of shock or by diaschisis, sensibility to touches with cotton-wool is never lost over hair-clad parts. Over hairless parts stimulation with cotton-wool may produce a sensation which seems "less plain" to the patient, and his answers may show the same inconstancy so evident when he is tested with graduated tactile stimuli.

2.—MEASURED PAINFUL STIMULI.

In all lesions of the sensory path below the optic thalamus some loss of sensation to painful stimuli is of common occurrence. But we have never discovered any disturbance of this form of sensibility as the consequence of a stationary cortical lesion, except when the lesion was recent or unless the patient had suffered recently from convulsions, or had been subjected to other causes of shock.

A prick is the only effective means of applying a measurable painful stimulus to the skin. But all mechanical means for measuring the force needed to evoke a sensation of pain when a sharp point is thrust into the skin labour under the same disadvantage. Any sharp object, such as a needle, produces first of all the recognition that the stimulus is pointed: further pressure adds to this a sensation of pain. Now it is almost impossible to prevent the ordinary patient from saying that he is pricked whenever he appreciates that the stimulus is a sharp point, and if he is told to wait until he obtains a sensation of pain we run the risk of placing the threshold too high.

Usually the patient can discover no difference between two pricks of the same force applied to similar portions on the two sides of the body, but occasionally he states that the stimulus is "plainer" or "sharper" on the normal than on the abnormal part. This difference in sensation is accompanied by no raising of the threshold either to prick or to painful pressure. The readings obtained with the prick-algesimeter, or with the pressure-algometer, are the same on the two sides. Moreover, the patient shows no more signs of discomfort from the one side than from the other, with the same stimulus. We therefore believe that this want of "plainness" or "sharpness" of which the patient may complain is due to a want of distinct appreciation of the pointed nature of the stimulus; that is to say, the want of "plainness" or "sharpness" is not due to a diminished sensibility to the painful aspect of the prick.

The pressure-algometer gives a measure of discomfort rather than pain. To this coarse stimulus the affected part responds as readily as the normal, and we have found none of that over-reaction so prominent a feature with lesions of the optic thalamus.

Thus pure cortical lesions cause no increase or decrease of sensibility to measured painful stimuli. But if the cortical destruction is recent or progressive, or if it produces convulsions, however slight, remarkable defects may appear in painful sensibility. The threshold, not only to prick but to painful pressure, may be considerably raised, and sometimes even coarse pricking may fail to evoke a sensation with any certainty. In fact, we may be face to face with a truly diminished sensibility to painful stimuli closely resembling the loss produced by interference with sensory impulses at a lower level. These changes are due to shock, exhaustion, and to the state called by Monakow "diaschisis." They are due to a profound disturbance of function extending back beyond the level of the sensory cortex and affecting even the receptive mechanism in the optic thalamus.

In conclusion, a pure cortical lesion leads to no change in the threshold to measurable painful or uncomfortable stimuli. Nor does the patient express greater dislike to these stimuli on one side than on the other. A prick may be said to be "plainer" or "sharper" on the normal than on the affected side, but this is due to a defective appreciation of the pointed nature of the stimulus and bears no direct relation to the painfulness of the sensation evoked.

3.—TEMPERATURE.

Many cortical lesions produce no change in the response to thermal stimuli, provided those periods of shock which follow an operation or an epileptiform seizure are strictly avoided. In other cases, however, we found definite changes in the sensibility of the affected parts to heat and cold, although the lesion had remained quiescent for many years. In every case the nature of the disturbance in sensation was similar, and consisted essentially in an increase of the range within which a thermal stimulus was thought to be neither hot nor cold. Normally this neutral zone varies greatly under different conditions and in different persons. It usually occupies from 2° to 5° C., but its position on the scale shifts with the external temperature. At any moment it can be raised or lowered by warming or cooling the hand; but although the position on the scale may be shifted by adaptation the interval in which a thermal stimulus is thought to be neither hot nor cold is materially altered.

Fortunately, in all our cases we were able to compare the behaviour of the normal and the affected sides of the body under the same conditions and with equal care. Now, whenever the appreciation of thermal stimuli was affected by a cortical lesion, this neutral zone extended over a greater number of degrees than on the normal hand. Not only is the range of the neutral zone increased, but the responses from the affected hand are slow and irregular compared with those obtained from normal parts under similar conditions. Moreover, the power of comparing two thermal stimuli, applied either together or in sequence, may be diminished. Here, as with the defects of tactile sensibility, it is the power of discrimination, the faculty of comparing two stimuli with one another, which is disturbed by cortical lesion. The only actual loss of sensation, therefore, falls upon that part of scale where thermal recognition habitually depends on some previously existing standard. In conclusion, we find that the appreciation of heat and cold was not affected in a considerable number of cortical lesions. But whenever thermal sensibility was disturbed the following changes were found:—

1. The neutral zone, within which the stimulus was said to be neither hot nor cold, was considerably enlarged in comparison with that observed on similar normal parts of the same patient.

2. The patient complained that, although he recognised correctly the nature of the stimulus, it seemed "less plain" than over normal parts. His answers were less constant and less certain; a temperature recognised without difficulty at one time seemed doubtful at another.

3. The power of discriminating the relative coolness of two cold stimuli or the relative warmth of two hot tubes may be diminished. Thus 20° C. may be said to be the same as ice, although both are uniformly called cold, and 40° C. may seem as warm as, or even warmer than, 48° C. The faculty of appreciating the relation to one another of two temperatures on the same side of the scale is disturbed.

4.—THE APPRECIATION OF POSTURE AND OF PASSIVE MOVEMENT.

Inability to recognise the position of the affected part in space is the most frequent sensory defect produced by lesions of the cerebral cortex. In some cases this and the allied faculty of recognising passive movement may be the only discoverable abnormalities. Whenever sensation is disturbed at all these two forms of spacial recognition will be certainly affected. Since some disturbance of the power of recognising passive movement always accompanies defective postural recognition, these two kindred faculties will be dealt with together in this section.

(*a*) *Recognition of Posture.*

In most cases of cortical disease, the usual rough method of testing is amply sufficient to demonstrate defective appreciation of posture. The patient's eyes are closed, and the affected limb is placed in some position different from that in which it lay at first. He is then told to touch some part of it, such as the index finger, with his normal hand. At first he usually fails to find the limb; when at last he strikes some part of it he moves his indicating hand down to find the finger he was asked to touch. Should the power of localisation remain intact he can ultimately grope his way to the exact spot; but if localisation is also affected, although he may reach the hand, he will probably be unable to find the finger.

So gross is the defective recognition of posture in most cases that this method amply suffices to demonstrate it in an unequivocal manner. Horsley [10†] has, however, introduced a useful means of measuring this deviation from the normal. The finger to be tested is applied to the one surface of a glass plate divided by lines into measured squares, and with the free hand the patient seeks to indicate on the other surface of the plate the position of the finger he is seeking. The results of his attempts can be read off on the measured plate. Instead of this glass plate we have used a piece of stiff cardboard. In the centre of the one surface of this cardboard is a slight depression to receive the tip of the index fever, and on the other a sheet of white paper can be fixed. With the normal hand the patient seeks to indicate the position of the affected finger, which remains at rest in the depression. The point upon which he ultimately settles is marked on the paper. His indicating hand is then withdrawn, and he is asked to make another attempt. Each record of a series of observations made in this way can be measured and collated at leisure.

In every case where sensation was disturbed in any way, however slightly, as the result of a cortical lesion the records with Horsley's plate showed some loss of postural appreciation in the affected hand. This method, therefore, forms a delicate means of detecting sensory changes of cortical origin.

The deviations discovered by Horsley's method, even in normal individuals, are so considerable that it is necessary to have some standard in each patient with which to compare the records obtained from the affected parts. It might be objected that most cortical lesions produce so much paralysis that the affected hand cannot be used to point out the position of the normal forefinger. But in spite of its paresis and defective sense of posture, the records obtained when the affected hand sought the normal forefinger were uniformly better than when the patient attempted to point to the affected forefinger with his normal hand. That is to say, defective appreciation of the position of the hand to be sought for has a more disturbing effect upon the records than weakness and loss of postural sense in the indicating hand.

† These and other reference numbers relate to a bibliography at the end.

All these tests depend on knowledge of the position in space of the extremity as a whole. To what extent its separate segments are affected can only be discovered by asking the patient to imitate, as exactly as possible with his normal limb, the posture of the affected part. His eyes are closed and, whilst his attention is diverted by conversation, some part such as the index finger is moved into the desired position. After an interval he is asked to place his normal index in the same position as the index of the opposite hand. By this means we have been able to confirm the statements of most recent writers that the gravest loss produced by a cortical lesion is usually found in the extremity of the limb (Goldscheider [9], Petrén, Bergmark [1]).

(*b*) *Recognition of Passive Movement.*

The inability to recognise posture is always associated with diminished appreciation of passive movements, in some cases so great that even complete flexion and extension of a joint cannot be recognised. Here no measurement is required; the loss of appreciation is absolute. But whenever the loss is less gross we agree with Petrén and his fellow-workers that the smallest movement which can be appreciated by the patient must be measured; such measurement alone can demonstrate whether this faculty is or is not affected.

Measurements only can furnish us with the materials for determining the relative extent to which the appreciation of passive movement is disturbed at the various joints of the affected limb, and in cases where the condition of the patient is changing they may form a useful record of the progress of the disease. But when we attempt to measure the extent of the smallest appreciable movement, two different phases of recognition must be distinguished. The patient may say at once when he thinks a movement has occurred; this gives the measure of the least perceptible movement. Or he may wait until he is able to indicate its direction. As a rule, in the normal limb most patients wait until they can recognise the direction of the movement before they say that the joint has been moved; but the difference between the point at which the movement is appreciated and that at which its direction is recognised is normally small. In the abnormal limb, however, this distance is greatly exaggerated, and movements may be perceived long before their direction can be recognised. It is, therefore, important to record both the extent of the smallest movement perceived and the range necessary to evoke recognition of its direction.

All cortical lesions which produce any change in sensibility lessen the power of appreciating passive movements and the knowledge of their direction. In every case this loss was associated with a concomitant disturbance of the recognition of posture. In all our cases the loss was greatest towards the distal portions of the limb; in this it corresponds exactly with the disturbance of the sense of posture. Here we can only confirm the work of almost every previous observer.

In conclusion, we find, like most of our predecessors, that—

1. Cortical lesions most frequently disturb the recognition of posture and of passive movements. Whenever sensation is in any way affected in consequence of a cortical lesion these two functions suffer.

2. In all our cases the disturbance in the faculty of recognising posture and passive movements was greater towards the peripheral parts of the affected limb.

3. When a patient with unilateral disturbance of these faculties attempts to point to some part of his body, defective knowledge of its position causes greater error than want of recognition of posture and movement in the hand with which he points.

4. When testing the patient's power of appreciating passive movement the answers are frequently uncertain and hallucinations of movement may occur. And yet the patient may be remarkably consistent and accurate when normal parts are tested.

5.—LOCALISATION.

By localisation we understand the power of recognising correctly the spot that has been stimulated, and it would seem at first sight that little difficulty could arise in discovering whether this faculty was affected or not, but a good deal of confusion exists owing to technical difficulties inherent in the methods usually employed to investigate the power of localisation.

Of all the methods at present in use that of Henri is probably the most suitable. Excellent and simple as we

found this method it labours under one serious defect for clinical purposes, as ordinary patients were liable to become confused when asked to point out the spot stimulated on a diagram, picture, or even on a photograph of the hand. We therefore adopted the following modification, which we found to be a great improvement on the original Henri method. The hand to be tested, for example the left, is hidden from the patient's sight with a screen. One of us standing behind places his own left hand in a similar position in full view of the patient, who indicates on this living model the situation of the place where he believes he has been touched. A second observer marks on a life-sized diagram the position of the stimulated spot and the point indicated by the patient. This method we have employed throughout this work. It avoids both the technical difficulties of spot-naming and the fallacies of the groping method, and is peculiarly useful in clinical investigations.

The uncertainty and irregularity of response to tactile and pressure stimuli, so common a consequence of cortical lesions, are liable to lead to fallacious results when testing the power of localisation. We usually, therefore, touch the spot with some blunt instrument of neutral temperature, and continue the touches until the patient says he appreciates the contact. He then indicates on the hand of one of the observers the situation of the stimulated spot.

The power of recognising the position of a spot stimulated is comparatively seldom affected as a consequence of pure cortical lesions, provided all periods of shock are avoided. Most seizures, and all operations on the brain, are followed by temporary loss of this function grossly in excess of anything found with stationary lesions of the cortex. The methods we have employed enable us to discover whether the power of localisation is intact or not, although the patient is entirely ignorant of the position of the affected limb; even when this is so every part of the affected hand may be touched in succession without a single mistaken answer. But should localisation be affected scarcely a single stimulus is referred to its correct position, and the patient frequently complains that he has "no idea" where he has been touched.

We cannot insist too strongly that when localisation is defective from lesions of the cortex the stimulus is not localised in some false direction, but the patient has a vague and uncertain idea amounting in some cases to complete ignorance of its position. Erroneous localisation is not due to the uncertainty in tactile appreciation so commonly produced by a cortical lesion; for it is equally manifest when the stimulus that the patient is asked to localise is a prick about which he is never in doubt. Defective localisation is not a necessary concomitant of the defective recognition of posture so commonly produced by cortical lesions. In several cases where the appreciation of position and passive movement was gravely affected localisation was demonstrated to be perfect by every method except that of groping for the stimulated spot. The faculty of localising the stimulated spot as determined by all methods except groping is less often affected by a cortical lesion than the power of appreciating posture. In fact, we have not yet seen a case in which localisation was disturbed without a coincident loss in postural recognition.

The conclusions to which we have arrived in this section may be summed up as follows:—

1. The power of localising the stimulated spot is not commonly lost as a consequence of cortical lesions.

2. This faculty is independent of the power of recognising the position of the affected limb; appreciation of posture may be lost, although localisation is not in any way disturbed.

3. If the power of localisation is lost the patient will be unable to recognise not only the position of a spot touched, but also the position of a prick.

4. When localisation is defective the patient does not habitually localise in a particular direction, but ceases to be certain where he has been touched or pricked.

6.—THE COMPASS-TEST.

Loss of the power to distinguish two points applied to the skin simultaneously is one of the most striking changes produced by cortical lesions. It is not present in every case; the patient may have difficulty in recognising the posture of the affected limb, and the appreciation of passive movements may be diminished, yet the compass-test may yield equally good results on the two sides. But with the larger number of cortical lesions the discrimination of two points will be affected. It may be, in the milder cases,¶ that the threshold is raised; to these we shall return later. More commonly no threshold can be obtained even by separating the limbs of the compasses to the widest extent possible within the limits of the principal segments of the affected limb. If a bad record is obtained when the points are 5 cm. apart, widening the distance to 20 cm. may cause no material improvement. Decreasing the difficulty of the problem does not of necessity improve the accuracy of response; estimation of a threshold has become impossible.

Any defect in tactile sensibility is liable to disturb the compass-records. When, therefore, we consider the peculiar changes described in the section on graduated tactile stimuli, the loss in discrimination of two points might appear at first sight to be due to diminished tactile acuity. This cannot, however, be the cause of the defective compass-records; for the inability to distinguish two points applied simultaneously is equally definite if each limb of the compasses is armed with a needle and two pricks replace the two tactile stimuli. We have already seen that the recognition of a prick is never destroyed in consequence of a cortical lesion, and sensibility to pain undergoes no changes analogous to those of tactile sensibility. It is, therefore, obvious that the power of recognising "two-ness" is a separate function of sensation which may be destroyed by a cortical lesion. This loss is not dependent on the changes in tactile sensibility, though the two defects are strictly analogous phenomena.

Not every cortical lesion produces a severe loss of compass-discrimination. Although the recognition of posture is disturbed, the compass-records may remain equally good on the two sides; but as soon as tactile sensibility shows any of the changes produced by a lesion of the cortex the power of distinguishing two points will also suffer. Sometimes, in cases where sensation is little disturbed, it is possible by widening the distance between the compass-points to obtain a perfect record over the affected part; a true threshold can then be discovered. But the records tend to be confused by the same irregularity and uncertainty of response so characteristic of the disturbed tactile sensibility in these cases of cortical disease.

We may conclude from the observations described in this section that—

1. A cortical lesion may destroy the power of discriminating two compass-points, both when applied simultaneously and successively. If this is the case, no threshold can be obtained for either form of the test; increasing the distance between the points does not constantly improve the accuracy of the answers.

2. This disturbance is not dependent on changes in tactile appreciation, for it can be demonstrated equally well with two painful as with two tactile stimuli.

3. The condition of tactile sensibility and the accuracy of the simultaneous compass-test are closely associated; a raised tactile threshold is usually accompanied by a raised threshold for the appreciation of two points simultaneously applied.

4. Should the power be preserved of recognising two points when the compasses are applied consecutively, localisation will be found to be intact. The patient's appreciation of the two points when they are separated by an interval of time is due to the recognition of the separate locality of the two spots touched.

7.—THE APPRECIATION OF WEIGHT.

This test has been too frequently neglected in clinical work, probably because it demands considerable care on the part of the observer and goodwill in the patient. When carefully carried out no test is more satisfactory, for the results can be expressed in a numerical relationship, and when the faculty of recognising differences in weight is disturbed the errors, compared with those of the normal hand, are enormous.

There are several ways of conducting this test which have been fully described elsewhere. But at the highest sensory level the appreciation of difference in weight depends mainly upon two faculties. When a weight placed upon the fully supported hand is either increased or diminished, the recognition of the change is based on the power of appreciating differences in pressure. To estimate the relation between two weights placed upon the hand one after the other requires, however, not only an appreciation of pressure, but

also the power of relating some consequence of the first weight with the immediate effect of the second weight. Lastly, when a weight is placed at the same moment in each palm, and the patient is allowed to "weigh" the two objects against one another, he depends mainly upon his power of estimating movement and posture.

Cortical lesions usually diminish the accuracy of the answers to all three tests, and if sensation is severely affected all power of estimating weight may be lost. Although the patient may still appreciate the contact of the weights that are placed upon his hand, he may be totally unable to recognise their relation to one another, however the test may be applied.

In conclusion, we have found that—

1. The power of estimating the relative weight of two objects of the same size and shape is readily disturbed by cortical lesions.

2. Though the patient retains sensations of contact when the weight is placed in his hand all power of recognising the relative heaviness of the object has disappeared.

3. This faculty is equally disturbed in most cases whether the weights are placed on the supported or unsupported hand.

3.—APPRECIATION OF SIZE, SHAPE, AND FORM IN THREE DIMENSIONS.

To recognise size, shape, and form demands that the relation between two percepts should be correctly appreciated. In the case of the tests for size, we frankly ask our patients for the difference between two objects of the same shape. When testing for shape and form a relation is always implied between the test-object and something which the patient has experienced before.

In most cases when sensation is affected appreciation of size, shape, and form is lost; the patient usually complains that he has "not the least idea" of the shape or relative size of the test-objects. Although he insists that he "can feel them quite well," they convey no indication that they possess size, shape, or form. One of our patients recognised that the cone had a point because in his manipulations he pressed it into his hand; but he had no idea that it possessed any shape. This total abolition of the power to recognise size, shape, and form makes the defect peculiarly easy to discover even by the crudest tests. Thus, it is universally acknowledged that cortical lesions tend to destroy the power of recognising common objects, such as a knife, scissors, or coin placed in the hand, and our more accurately graded tests simply serve to confirm this general consensus of opinion.

This defective recognition is not in any way due to the paralysis produced by the cortical destruction; for in two cases where the movement of the hand was gravely affected size, shape, and form were perfectly recognised. When a test object is placed in the patient's hand it is of advantage if he can roll it between his fingers; but where the faculty of recognising these tests is maintained, even objects in three dimensions will be named correctly if the patient's fingers are closed over them passively.

The correct appreciation of size, shape, and form does not depend entirely on the recognition of posture, for it was perfectly retained in two cases, although postural recognition and the appreciation of passive movement were gravely affected. But in every case where the sense of posture was affected and we were unable at the same time to obtain a tactile threshold all recognition of size, shape, and form was abolished. Not that such recognition depends directly upon the state of tactile sensibility. The combined affection of the sense of posture and loss of the tactile threshold indicate simply that the defect produced by the lesion has reached a sufficient grade to destroy the power of recognising identity and difference. The appreciation of size, shape, and form, therefore, suffers like all tests which imply a relation.

9.—ROUGHNESS AND TEXTURE.

The power of appreciating roughness can be compared on the two halves of the body by means of the Graham Brown æsthesiometer. In this instrument one or more cylinders are projected to a measurable extent from a smooth metal surface and the patient says whether the instrument is smooth or rough when it is moved across some part, such as the hand.

In no case of quiescent cortical lesion was there any appreciable difference between the affected and normal parts. Not only could the patient experience no difference, but the extent to which the cylinder must be protruded to evoke a sensation of roughness was the same for the two sides. This stimulus is one which can be appreciated notwithstanding grave loss of sensibility produced by a cortical lesion. But in spite of this power to recognise the roughness or smoothness of the surface of the æsthesiometer all appreciation of texture may be lost. This test demands not only the immediate recognition that the object is rough or smooth, but the relation of that sensation to other percepts. Thus, although he may know that one surface is rough and another is smooth, he has no power of naming the substance by its texture. Cotton, silk, and velvet are all one to the affected hand, although readily distinguished on the normal side. When once this test has been applied the patients often complain that they have lost all idea of texture, saying, "I can feel it, but I have not the least idea what it is."

These two tests, both depending on the same sensory impulses, clearly illustrate the nature of the loss of sensibility produced by cortical lesions. The one depends upon the immediate appreciation of a smooth or rough stimulus. The other demands the correct relation of one group of precepts to another. The first is therefore maintained, whilst the second is destroyed by any cortical lesion which produces a measurable disturbance of sensibility.

10.—VIBRATION.

At lower levels of the nervous system a lesion frequently destroys all power of appreciating the vibrations of a tuning-fork. But we believe this never occurs from a stationary cortical lesion. Usually the patient can discover no difference in the sensations produced by the fork on the two halves of his body. Occasionally, however, he says it seems "plainer" or "stronger" on the normal than on the affected limb. If this is the case the vibration will be appreciated for a shorter period over the affected parts. The fork is set in motion and the patient is asked to say when he can no longer appreciate the vibration. It is then rapidly transferred to a similar spot on the normal limb and vibration may still be recognised for as much as 20 seconds longer. If this defect were greatly increased it is obvious that the power of recognising vibration would be abolished, but this never occurs from a pure cortical lesion. The vibration of a tuning fork seems to contain some sensory element which insures that it is appreciated even though the cortex is gravely affected. But the cortical lesion diminishes the "plainness" of the sensation and shortens its duration.

In some cases the vibration of the tuning fork not only seems "plainer," but is said to beat "faster" on the normal than on the affected limb. As this difference depends entirely on introspection a few patients only have noticed it, and we have avoided suggesting any change in the apparent relative rapidity on the two sides.

IV.—ANALYSIS OF THE LOSS OF SENSATION PRODUCED BY LESIONS OF THE OPTIC THALAMUS AND NEIGHBOURING PARTS.

In a previous section we have described the various forms of sensation which may be disturbed by lesions of the optic thalamus and its neighbourhood. Test by test we followed the loss of sensation, and showed that it varied in different cases within extreme limits. We shall now attempt to discover by analysis of these disturbances of sensation whether the impulses which pass away from the optic thalamus differ in their grouping from those which enter this organ from the mid-brain.

Since the optic thalamus is the terminal station for all secondary sensory paths, a lesion situated within its limits might destroy the receptive structures in which their impulses end; in such a case the loss of sensation would correspond to that produced by an equivalent lesion of the tracts of the mid-brain by which these impulses are conducted to the optic thalamus.

On the other hand, the lesion might leave this receptive mechanism intact but interfere with the paths that are streaming away to the cortex. In this case the sensory defect would reveal what elements of sensation pass to the cortex after they have been re-grouped in the thalamus.

1.—DISTURBANCE OF THE AFFERENT RECEPTIVE MECHANISM IN THE OPTIC THALAMUS.

In certain cases, which show the over-reaction to afferent stimuli and other signs indicative of a lesion of the optic thalamus, the loss of sensation is extremely gross. Not only

is sensibility for touch and temperature abolished, but even the threshold for painful stimuli may be raised. Pain, once appreciated, produces more discomfort on the affected half of the body; but in order that this appreciation may occur, the stimulus must be more intense than on the normal side. The strength of a prick, and the amount of pressure required to produce pain, are greater over the affected parts, although as soon as pain is produced the reaction is excessive. This loss of sensibility is probably due to interference with painful impulses either in the receptive portion of the optic thalamus, or as they still run in the secondary sensory paths which end in this junction.

We believe that in all cases which present the "*syndrome thalamique*," accompanied by loss of sensation so gross that the threshold is raised to affective stimuli, the receptive mechanism is affected; this seems to be situated mainly in the caudal portion of the lateral nucleus of the optic thalamus.

2.—DISTURBANCE OF SENSORY IMPULSES AS THEY PASS FROM THE OPTIC THALAMUS TO THE CORTEX.

In certain cases which show characteristic signs of a lesion of the optic thalamus the threshold to prick is identical on the two halves of the body and the readings of the pressure algometer may be actually lower on the affected side. The loss of appreciation of posture and passive movement may be severe, and the power of comparing two weights may be diminished, but the remaining forms of sensibility are less grossly affected than in that group of cases we have just considered.

Here we believe that the receptive mechanism is not affected to any material extent. The complete retention of painful sensibility shows that the impulses upon which it is based have been allowed to exert their full influence on the central organ where they are transformed into sensation. Moreover, the sensory elements are dissociated in ways which are unknown, until this level is reached; both the nature of the loss of sensation and the character of the sensibility which remains show that the afferent impulses must have been interrupted after they have undergone a fresh re-grouping at the thalamic junction. An analysis of these forms of dissociated sensation will therefore show the grouping of the impulses which pass away from the optic thalamus to act upon the sensory cortex.

It would seem that sensory impulses travel from the optic thalamus to the cortex in five groups. 1. Those concerned with the recognition of posture and passive movement. If these impulses are affected the power of discriminating weights on the unsupported hand may also be diminished. 2. Certain tactile elements; integrity of this group is necessary for the discrimination of weights placed on the fully supported hand. 3. Those impulses which underlie the appreciation of two points applied simultaneously (the compass test); on this group also depends the recognition of size, shape, and form in three dimensions. 4. Those which underlie the power of localising the situation of a stimulated spot. Recognition of the double nature of two points applied consecutively also depends on this group of impulses. 5. All thermal impulses are grouped together to underlie a scale of sensations with heat at the one end and cold at the other. At the level with which we are now dealing these impulses have already excited the affective centre and are passing away to the cortex.

V.—THEORETICAL CONCLUSIONS.

So far we have described in detail the effects which may follow lesions situated in different parts of the brain. In the present section we shall attempt, by analysis of these results, to present a coherent account of the mechanism of sensation.

The anatomical structure known as the optic thalamus is an extremely complex portion of the brain, and contains not only the terminal centre for certain aspects of sensations, but plays a threefold part in the fate of sensory impulses. 1. Firstly, it contains the termination of all secondary paths; here sensory impulses are grouped afresh and redistributed in two directions; on the one hand to the cortex cerebri, and on the other to the grey matter of the optic thalamus itself (*vide* section IV.). 2. Secondly, it contains a mass of grey matter, the essential organ of the thalamus, which forms the centre for certain fundamental elements of sensation. It is complementary to the sensory cortex and exercises different functions in the production of sensation. 3. Lastly, the lateral part of the optic thalamus is the organ through which the cortex can influence the essential thalamic centre, controlling and checking its activity. The excessive response to affective stimuli, so prominent a feature of lesions in this situation, is not due to irritation but to removal of cortical control.

Next we shall consider the nature of the activity of the sensory cortex. We shall show that it is concerned more particularly with discrimination and with the relation between two sensations, or between a sensation and its representation. It is essentially the organ by which attention can be concentrated on any part of the body.

Finally, we shall deal with the interaction of the cerebral cortex and the centre in the optic thalamus during the production of sensation.

1.—THE ESSENTIAL ACTIVITY OF THE THALAMIC CENTRE.

The most remarkable feature in that group of thalamic cases with which we have dealt in this work is not loss of sensation, but an excessive response to affective stimuli. This positive effect, an actual overloading of sensation with feeling tone, was present in all our 24 cases of this class; and, though emphasis has not been laid upon it as a characteristic feature, it has been observed by others in cases where the existence of a lesion in the lateral zone of the optic thalamus was confirmed by autopsy (Roussy [33]. Edinger [8]). This excessive response may be accompanied by much or by little loss of sensation, but the extent of this loss bears no relation to the amount of the over-reaction to painful stimuli. But the characteristic thalamic response does not consist in an excessive reaction to painful stimuli only. In suitable cases we have shown that the response to pleasurable stimuli, such as warmth, is also greater on the affected side. Moreover, the manifestations of general mental states of pleasure and of pain may be more pronounced on the abnormal half of the body.

The pains and uncomfortable paræsthesiæ which occur in these cases have been explained by some observers as due to irritation. But this conventional hypothesis is insufficient to explain the observed facts in the clinical course of these cases. Moreover, we have pointed out that the response to pleasurable stimuli is also increased in some of these cases, a condition incompatible with the constant existence of an irritative lesion which evokes pain. Further, we have not found this peculiar over-response from lesions of other parts of the sensory path,[1] and the extreme rarity of such cases in the literature, compared with the overwhelming frequency of this over-response with the lesions of the optic thalamus, compels us to adopt some other explanation for its occurrence at this level of the nervous system.

Let us turn for a moment to the motor side of the nervous system where the effects produced by removal of control are more fully understood. It is well known that a lesion of the motor region of the cerebral cortex, or of the tracts which run from it to the spinal cord, produces not only loss of voluntary movement, but also a positive effect in the increased tone and rigidity of the affected limbs. This increase of tone, as Hughlings Jackson [13] pointed out in the Croonian lectures nearly 30 years ago, is not the direct effect of the destructive lesion, but is produced by the activity of subcortical centres released from control. He laid down the law that no destructive lesion can produce a positive effect directly. The activity of the cortex cerebri normally inhibits and controls subcortical motor centres, and the destructive lesion sets these centres free to display their powers unchecked. Loss of voluntary power is consequently associated with tonic over-action and an increased reflex discharge in response to afferent impulses.

We believe that an exactly similar condition is revealed on

[1] Spontaneous pains associated with over-sensitiveness to prick or other stimuli have been described as a consequence of lesions of the central nervous system at other parts of the sensory path, but few of these cases will stand criticism. For example, in the case published by Raymond and Rose [30] as a lesion of the pons varolii the authors themselves admit the possibility of multiple lesions, and the presence of choreic and athetoid movements points in all probability to affection of the optic thalamus. Raymond and Français [29] recorded a pontine case in which pains and "hyperæsthesia" to prick were present, but the position of the lesion was not determined by autopsy. In Mann's case [20] there was merely persistent unilateral pain, and Mann himself recognised that this was accompanied by "hypæsthesia" and not by "hyperæsthesia," as in Edinger's case of thalamic disease with which he contrasted it.

the sensory side of the nervous system by cases of thalamic disease accompanied by an excessive response to peripheral stimuli. We know that paths run, not only from the optic thalamus to the cortex, but from the cortex to the thalamus, and they have been shown ([23] [4] [36]) to terminate in its lateral zone, the very region affected in cases that have exhibited the "syndrome thalamique." But since these paths come from all parts of the cortex to impinge upon the optic thalamus the functions they exercise cannot be removed by partial destruction of the cerebral hemispheres; cortical lesions produce no thalamic over-response to affective stimuli.

The only function which can be ascribed to these cortical thalamic paths is that through them the cortex controls, in some way, the activity of the thalamus. If this view is correct, lesions which interrupt these paths, but leave intact the main substance of the optic thalamus, must lead to a permanent over-activity of functions exercised by that organ. Any afferent impulses which are capable of exciting this part of the brain will act on an uncontrolled centre and must, consequently, evoke an excessive effect.

We believe that the essential organ of the optic thalamus is the centre of consciousness for certain elements of sensation. It responds to all stimuli capable of evoking either pleasure and pain, or consciousness of a change in state. The feeling-tone of somatic or visceral sensation is the product of thalamic activity, and the fact that a sensation is devoid of feeling-tone shows that the impulses which underlie its production make no thalamic appeal. The functions of this organ are influenced by the coincident activity of the cortical centres, and this control is effected by means of paths from the cortex to the thalamus which probably end in its lateral nucleus. Injury in this region sets free the thalamic centre from control, and it can therefore react without restraint to all stimuli capable of arousing affective states. Since, however, most stimuli which act upon the body in daily life are noxious and so contain a disagreeable element, most sensations experienced by the patient with a lesion of the optic thalamus are painful. This is particularly the case when sensation is so gravely diminished that stimuli of great intensity only can reach consciousness. The occurrence of spontaneous pains and the painful paræsthesiæ of the affected half of the body, so constant a feature of these cases, are due to the uncontrolled activity of this centre through which painful stimuli evoke a disagreeable sensation.

2.—THE NATURE OF THE SENSORY ACTIVITY OF THE CORTEX.

In a previous section we have described the results produced by a cortical lesion upon a series of measured sensory tests. Let us now analyse these defects in the hope that thereby we may learn the part played by the cortex in that response to an external stimulus we call a sensation.

Afferent impulses on their way from the periphery to the cortex pay toll first of all to the unconscious coördinating mechanisms of the spinal cord and the cerebellum. Then, after being regrouped at the thalamic junction, they act upon two terminal centres. One of these, the essential organ of the optic thalamus, responds to all those elements which can evoke consciousness of an internal change in state, more particularly pleasure and discomfort. Sensory impulses then pass by way of the internal capsule to act upon the cortex, and these are the afferent materials out of which the cortex manufactures the forms of sensation with which it is concerned.

We know the nature of these impulses as they travel through the capsule to the cortex; it is revealed by those cases of thalamic and capsular disease in which the loss of sensation is due to interference with paths which pass from the optic thalamus to the sensory cortex. The dissociations of sensibility which can occur under such conditions show that, after exciting the essential centre of the optic thalamus, sensory impulses pass on in five main groups to be distributed to the cortex: 1. Those which underlie postural recognition and the appreciation of passive movement. Upon this group depends the secondary faculty of judging the difference or identity of two weights placed on the unsupported hands. 2. Impulses which underlie the recognition of tactile differences or the power of appreciating those qualities of touch other than contact and roughness. To this group we owe the faculty of recognising the increase or diminution in weight of a test-object and of distinguishing the difference between two weights placed on the supported hand. 3. Those upon which depend spacial discrimination (compass-points applied simultaneously) and its allied faculty, the recognition of size and shape. 4. Those impulses which enable the patient to recognise the spot stimulated (localisation). They carry with them the power of appreciating the double nature of two points applied to the surface one after the other. 5. Thermal impulses. On this group depends the possibility of recognising those degrees of temperature which necessitate a comparison with the consequences of some previous thermal sensation. Such are the afferent materials out of which the cortex manufactures those forms of sensation for which it is responsible.

The power of estimating the relative warmth or coldness of two stimuli suffers when thermal sensibility is affected by a cortical lesion. The power of discriminating the relative coolness of two cold stimuli and the relative warmth of two hot tubes is diminished, provided two temperatures are chosen which do not appeal differently to the thalamic sensory centre. Thus even the faculty of appreciating the relative intensity of two temperatures on the same side of the scale is disturbed, although both may be named correctly. But these stimuli contain elements capable of rousing the activity of the essential thalamic centre. The tests for the recognition of posture, of passive movement, spacial discrimination (compasses), and the locality of the stimulated spot contain no such elements, and it is these aspects of sensation that suffer most profoundly in consequence of a lesion of the sensory cortex. Postural recognition and the appreciation of passive movements are usually grossly affected. The power of localising the stimulated spot is less frequently disturbed, but may be abolished. These two faculties are independent of one another and may be affected separately. Moreover, a disturbance of localisation caused by a lesion of the cortex is not due to coincident uncertainty of tactile sensibility, for it is equally demonstrable when the stimulus is a prick to which the patient responds on every occasion.

When dealing with the arrangement of the sensory impulses which pass through the internal capsule to be distributed to the cortex, we showed that the power of estimating weight, size, shape, and form in three dimensions depends on the integrity of several separate groups. Thus, the appreciation of difference between two weights placed in the unsupported hand demands perfect postural recognition. The faculty of estimating weights placed consecutively on the supported hand depends on the integrity of tactile sensibility. Such dissociation is impossible with lesions of the cortex, for we are no longer dealing with a disturbance of sensory impulses, but with the difficulty of recognising the relation between two percepts. The patient generally gives up all attempts at appreciation, saying he has "no idea" of the shape, form, or relative size and weight of the test-object.

The tests for the appreciation of roughness and of texture demonstrate clearly the part played by the cortex in sensation. With Graham Brown's æsthesiometer the threshold is identical on both hands; in every case the amount of protrusion necessary to make the flat surface of the instrument seem rough is the same on the two sides. In this test the patient has to determine solely whether the sensation is one of roughness or smoothness. But as soon as he is asked to correlate these sensations and combine them with those of touch, as in the tests for the appreciation of texture, he fails entirely.

Evidently one of the faculties which we owe to cortical activity is the power of relating one sensation to another, whether they arise simultaneously or consecutively. Recognition of weight, size, shape, form, and texture depends entirely on this faculty. Such tests consequently reveal the grossest defects whenever a cortical lesion produces any considerable influence upon sensibility. A little consideration shows that loss of this faculty of relation is at the bottom of the diminished appreciation of posture and passive movement which constantly forms one of the gravest defects produced by lesions of the cortex. For it would be impossible to discover the position of any part of the body unless the immediate postural sensations were related to something that had preceded them. A direct perception of posture, analogous to that of roughness, is impossible; in every case the new position of the limb is relative to some

previous posture. At any moment we can become conscious of the position of any part of our bodies, and although such postural recognition is not constantly in the central field of attention it always forms the measure against which we judge subsequent change. This is peculiarly the case with the appreciation of passive movement. When we sit immobile and imagine our fingers touching some object on the table many of us see at once the picture of an outstretched arm; the only image in consciousness is a visual one. Now in cases where all power of recognising posture is lost this visual image remains unchanged, and it cannot therefore be the standard to which we refer alterations in posture. Place the patient's affected arm in front of him on the bed, allowing him to see the position in which it lies; close his eyes, and in most cases he will see a mental picture of his hand. Then change its position whilst his eyes remain closed and he will continue to see a picture of the hand in its old position. Moreover, if localisation is not affected he will name correctly the spot stimulated, but will refer it to the position in which he visualises the hand. The visual image of the limb remains intact, although all power of appreciating changes in position is abolished. It is evident, therefore, that the standard resulting from previous postures and movements, to which immediate reference is made when a fresh position is recognised, cannot be a visual image.

Every recognisable change enters into consciousness already charged with its relation to something that has gone before, just as on a taxi-meter the distance is presented to us already transformed into shillings and pence. So the final product of the tests for the appreciation of posture or passive movement rises into consciousness as a measured postural change.

For this combined standard, against which all subsequent changes of posture are measured before they enter consciousness, we propose the word "schema." By means of perpetual alterations in position we are always building up a postural model of ourselves which constantly changes. Every new posture or movement is recorded on this plastic schema, and the activity of the cortex brings every fresh group of sensations evoked by altered posture into relation with it. Immediate postural recognition follows as soon as the relation is complete.

In the same way recognition of the locality of the stimulated spot demands the reference to another "schema." For a patient may be able to name correctly and indicate on a diagram, or on another person's hand, the exact position of the spot touched or pricked, and yet be ignorant of the position in space of the limb upon which it lies.

It is to the existence of these "schemata" that we owe the power of projecting our recognition of posture, movement, and locality beyond the limits of our own bodies to the end of some instrument held in the hand. Without them we could not probe with a stick, nor use a spoon unless our eyes were fixed upon the plate. Anything which participates in the conscious movement of our bodies is added to the model of ourselves and becomes part of these schemata: a woman's power of localisation may extend to the feather in her hat. Thus, it is evident that among the various functions of cortical activity which imply a relation, the act of comparison may be of different grades in the hierarchy of consciousness.

Evidently a lesion of the cortex produces an effect upon sensation of a different order from that found at any lower level of the nervous system. All those defects which may occur when a normal person is under examination with psycho-physical tests are present in a grossly exaggerated form. Those defects which we ordinarily attribute to want of attention are raised to a degree unknown in the normal human being. But the patient's power of general attention has not been lowered in such cases as those we have cited in this paper. Records from the limbs of the sound side show that the phenomena of defective attention are confined to the abnormal parts. A portion only of the patient has, as it were, become untrustworthy.

To sum up, we believe that the cerebral cortex is the organ by which we are able to focus attention upon the changes evoked by sensory impulses. A pure cortical lesion which is not advancing or causing periodic discharges will change the sensibility of the affected parts in such a way that the patient's answers appear to be untrustworthy. Such diminished power of attention makes the estimation of a threshold in many cases impossible. Uncertainty of response destroys all power of comparing one set of impressions with another and so prevents discrimination. But in addition to its function as an organ of local attention the sensory cortex is also the storehouse of past impressions. These may rise into consciousness as images, but more often, as in the case of spacial impressions, remain outside central consciousness. Here they form organised models of ourselves which may be termed "schemata." Such schemata modify the impression produced by incoming sensory impulses in such a way that the final sensations of position, and of locality, rise into consciousness charged with a relation to something that has happened before. Destruction of such "schemata" by a lesion of the cortex renders impossible all recognition of posture or of the locality of a stimulated spot in the affected part of the body.

3.—THE INTER-RELATION OF THE OPTIC THALAMUS AND THE CORTEX IN THE PRODUCTION OF SENSATION.

In daily life all stimuli excite more or less both thalamic and cortical centres, for most unselected sensations contain both affective and discriminative elements. But amongst the tests we have employed in sensory analysis some appeal almost entirely to the one or other centre. The test for recognition of posture, as carried out by us, is purely discriminative; whilst the pain produced by squeezing the testicle, or to a less degree by the pressure-algometer, appeals almost exclusively to the more affective centre.

Sensory impulses arriving at the optic thalamus are re-grouped in such a way that they can act upon both its essential centre and the sensory cortex. The essential organ of the thalamus is excited to "affective activity" by certain impulses and refuses to react to those which underlie the purely discriminative aspects of sensation. These pass on to influence the cortical centres where they are readily accepted. In a similar way the primary centres of the cortex cannot receive those components which underlie feeling-tone; in this direction they are completely blocked.

It has long been recognised that sensations are endowed with feeling-tone to different degrees. In those which underlie postural appreciation this quality is entirely absent, whilst visceral sensations are, in some instances, little more than a change in a general feeling-tone; one set of impulses appeals almost exclusively to the cortical centre, the other to that of the optic thalamus. All thermal stimuli, however, make a double appeal. Every sensation of heat or cold is either comfortable or uncomfortable; the only entirely indifferent temperature is one that is neither hot nor cold.

In the same way most unselected tactile stimuli appeal both to the sensory cortex and to the optic thalamus. For not only is a touch always related to, and distinguished from, something that has gone before it, but we have shown that contact, especially of an object moving over hair-clad parts, is capable of exciting thalamic activity. Vibrations of the tuning-fork also make a double appeal, for when the cortical paths are cut the amplitude of the vibration must be greater in order that they may be appreciated; on the other hand, the vibratory effect may be stronger on the abnormal side in those thalamic cases where the affective response is excessive.

But these two centres of consciousness are not co-equal and independent. Under normal conditions the activity of the thalamic centre, though of a different nature, is dominated by that of the cortex. When we examine the sensation normally produced by a prick we recognise that the pain develops slowly and lasts a considerable time after the stimulus has ceased. Moreover, the same intensity of stimulation will produce a different effect on the same spot on different occasions. A long, latent period, persistence, and want of uniformity are characteristic of all painful sensations. This is seen in an exaggerated form in cases where the thalamic centre has been freed from control. The response to prick is slow, but persists long after the stimulus has ceased. Moreover, the reaction when it occurs tends to be explosive; it is as if a spark had fired a magazine and the consequences were not commensurate with the cause.

On the contrary, the sensations normally produced by moderate tactile stimuli are characterised by a short latent period, and disappear almost immediately on the cessation of

the stimulus. A lesion of the sensory cortex disturbs both these characteristics. Tactile sensations become uncertain and incalculable, and no threshold can be obtained; persistence and hallucinations mar the uniformity of the records.

Now we have shown that the sensory cortex is the organ by which attention can be concentrated on any part of the body that is stimulated. The focus of attention is arrested by the changes produced by cortical activity at any one spot. These are sorted out and brought into relation with other sensory processes, past or present. Then the focus of attention sweeps on, attracted by some other object.

All stimuli which appeal to the thalamic centre have a high threshold. They must reach a high intensity before they can enter consciousness, but once they have risen above the threshold they tend to produce a change of excessive amount and duration, and this it is the business of the cortical mechanism to control. The low intensity of the stimuli that can arouse the sensory cortex, and its quick reaction-period, enable it to control the activity of the cumbersome mechanism of the thalamic centre.

Our view of the sensory mechanism put forward in this paper explains many of the facts already recognised both by psychologists and clinicians. It enables us to understand how integration can occur at all afferent levels of the nervous system, and makes development possible even in the individual. The aim of human evolution is the domination of feeling and instinct by discriminative mental activities. This struggle on the highest plane of mental life is begun at the lowest afferent level, and the issue becomes more clearly defined the nearer sensory impulses approach the field of consciousness.

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SALVARSAN IN SYPHILIS.

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THE reception of salvarsan by the medical profession in this country has been by no means uniform. While many favourable results have indeed been reported, it is also the fact that many expressions of opinion have appeared during the last few months in the medical journals adverse to the utility of salvarsan in the treatment of syphilis. It is true that for the most part these have come from those who have had but little practical experience of the method; nevertheless they have received, and have deservedly received, attention owing to the high position occupied by their writers. In these circumstances I feel it to be almost a duty to bear witness to the good results which I have seen follow the use of this drug, and that I should state that so far no harmful effects have come under my notice. Whether salvarsan will fulfil all the great expectations which were entertained on its first publication is doubtful, but that it is a drug strikingly effective in the treatment of syphilis I am fully persuaded.

This paper is intended to be nothing more than a preliminary note on the subject, for I hope later to publish a fuller account of my experiences with salvarsan, but my object in bringing forward the matter now is to show that if care be taken in the selection of the cases and the drug be administered cautiously the results obtained are extremely good, and in some cases at least have proved to be unattainable by other means.

Before the drug was put on the market Professor Ehrlich, at the request of the Editor of THE LANCET, very kindly sent me a supply of ampoules of "606" for the purpose of testing its value, and from that time to the present I have used it. My aim in its employment was to observe carefully the results of its use in comparatively few cases rather than to administer it to every case of syphilis seen by me. Also, in order to test the value of the drug with care, I did not inject any cases except those which gave a positive Wassermann reaction in addition to giving clinical signs of the disease. I rejected some cases in which the reaction was negative, even though clinically the diagnosis of syphilis was extremely probable or even practically certain, because I wished to be sure that the case was certainly syphilitic. I have employed the drug both in primary, secondary, and tertiary manifestations of the disease, and also in some cases exhibiting those later manifestations of syphilis which are often called parasyphilitic but are better called quaternary. Instead of giving particulars of the whole series, I think that I can more clearly present the effect of the treatment, and that the conclusions may prove of more value to others if I state simply the results which I have obtained.

Dose.—In my early cases I employed 0·45 gramme, but later I employed 0·5 and now 0·6 gramme. It has appeared to me that the improvement in the cases has been more rapidly shown with the larger dose, and I have not seen harm result from it in any case. It is possible that later the dose may have to be somewhat increased, but as to that time will show.

Mode of administration.—In my early cases I administered the drug by an intramuscular injection, and though it is an effective method it certainly gives rise to a good deal of pain for a few hours. This pain can be, in great part, controlled by a hypodermic injection of a quarter of a grain of morphine, and I have found it a good plan to give this morphine injection ten minutes or a quarter of an hour before the injection of the "606." Later I injected the drug intermuscularly in the following manner. The posterior fold of

the axilla is picked up between the finger and thumb an inch or two below the level of the angle of the scapula, and as this fold is formed by the latissimus dorsi that muscle will be held. The needle of the syringe is then passed deep to the muscle, so that it lies between the latissimus dorsi and the serratus posticus inferior. The injection of the preparation into this space causes much less pain than when the injection is intramuscular, for there is much less tension, and though the pain is sometimes troublesome, yet it is readily controlled by a hypodermic injection of morphine.

Mode of preparation for an intramuscular or intermuscular injection.—The method of preparation I have employed has been practically that which was shown me by Mr. J. E. R. McDonagh. The powder is rubbed up with a solution of sodium hydrate and then treated with acetic acid until the liquid is still just acid and then a little solution of sodium hydrate is added until it is just alkaline. The syringe used has a glass barrel and a solid metal piston. It was used fairly warm for two reasons, mainly not to chill the liquid to be injected, but partly also because when warm the piston fits more closely. The liquid is drawn into the syringe and then a little warm water is used to wash out the mortar, and that is also drawn into the syringe. Prepared in this way the bulk of the liquid is not great; it varies between 8 and 12 c.c., 9 or 10 being about the average—that is to say, it measures between two and three teaspoonfuls. The fluid is injected gently and the pain is not very great.

In the intravenous injection a weak alkaline solution is made as follows: A bottle is taken with divisions showing 50 c.c. About 100 c.c. of sterile water or saline solution are placed in the flask which contains a number of glass balls; the salvarsan (0·6 gramme) is then added and about 18 or 20 minims of 15 per cent. solution of sodium hydrate are added until a clear solution results. The bottle is shaken while the alkali is being added and the balls assist the solution of the powder. The bulk of the liquid is then made up to 300 c.c., which is the amount to be administered. A sharp needle is attached to a piece of rubber tubing and to the other end of that is a glass funnel. The funnel and tubing are filled with saline solution at a temperature of about 105° F., and the skin over the front of one elbow is painted with a 3 per cent. alcoholic solution of iodine. By means of a bandage tied round the upper arm the veins are rendered distinct, and the needle is inserted into one of the veins in front of the elbow, either the median cephalic or the median basilic, and some of the saline solution is allowed to run in. Then some layers of sterile gauze are placed in the mouth of the funnel for the purpose of filtering the solution which is poured into the funnel. The time taken by the 300 c.c. in entering the vein should, I think, be between 20 minutes and half an hour. When all the solution has been injected, it is well to let a little saline solution flow through the needle, so that when the needle is removed no salvarsan is left in the tissues. Some precautions are of great importance. All the apparatus employed must have been carefully sterilised. The solution should not be too cool, it is best to have it a few degrees over 100°, otherwise it may chill the patient and perhaps cause a shivering fit. The flask is easily warmed by standing it in hot water.

Wassermann's test.—As I have mentioned above, I have not injected any case with "606" unless and until it has given a positive Wassermann test. In some of the cases the fact that the test was negative was probably due to previous administration of mercury; nevertheless, I did not inject any case until the Wassermann test became positive. I have found that it may take between two or three months for a Wassermann test to become positive after it has been negative from the administration of mercury. I am aware that it has been stated that mercury does not interfere with the Wassermann test, but that has not been my experience.

Harmful results.—I have had no results which could be called harmful. In no instance has an abscess formed locally, though in one case a little fluid collected at the site of injection, but the contents were quite clear. In no case have any ocular symptoms resulted. I cannot help thinking that in most of the cases in which harm has resulted there has been some fault in technique. In some instances apparently the solution has been injected into the vein without filtration, so that the risk of embolism has been run. The greatest care is required and must be used.

Stage of the disease.—The drug has proved efficacious in all stages of syphilis—in the primary, secondary, and tertiary stages, and also in the parasyphilides. I think the most rapid results followed the treatment when the disease was in the tertiary stage. The manifestations of the secondary stage were distinctly less rapidly affected, possibly because, as Ehrlich has suggested, the drug cannot affect an area where the vessels are thrombosed. I need not describe in detail any cases in which the manifestations were those common in syphilis, but there are a few that deserve special mention.

In the first case which I injected the patient was a young woman, who had numerous manifestations of syphilis probably congenital in origin. She had on the leg a deep gummatous ulcer, measuring some 2½ inches in length and an inch in breadth. The depth also was about an inch. In addition she had a gummatous deposit in the left orbit causing some proptosis; there were marked atrophy of the disc and little more than the perception of light. At first I had some hesitation about using the drug in a case where the eye was already damaged, but it was clear that the loss of sight of the left eye was so serious that no real harm could be done. As a result of the injection the proptosis almost disappeared and curiously the vision improved markedly. The ulcer on the leg healed, though slowly. A few weeks later slight ulceration reappeared in the scar of the leg, but it only lasted for a short time and it again healed and has not broken down since, and no syphilitic manifestation has appeared subsequently, although nearly two years have elapsed since the injection. In this case the patient had been very thoroughly treated with mercury by one of my colleagues, but without effect.

In one case, where several nodules existed on the skull and much thickening of the left femur was present, rapid recovery followed the use of salvarsan, and, further, an old ununited fracture of the tibia united a few weeks after the injection.

In another case a woman was injected during the third month of pregnancy; labour took place at term, and the child was born perfectly healthy, and neither child nor mother has since exhibited any manifestations of the disease. In fact, the child is above the average in well-being.

In several cases of syphilis of the spinal cord and brain the improvement was marked, though the first signs of improvement were slow in appearing.

I used salvarsan in a fairly early case of general paralysis of the insane, but no noticeable improvement occurred. I am inclined to think that for intracranial syphilis the intramuscular method of injection is better than the intravenous, for the introduction of the drug into the circulation is less rapid. In most cases, however, I have no doubt that the intravenous injection is far preferable to any other mode of administration, but I repeat once more that it needs much care.

Recurrences.—So far I have had no case in which I have found it necessary to repeat the dose; doubtless in time such cases will occur to me as they have occurred to others.

Conclusions.—Judging merely from my experience of the cases treated by me, I can say that salvarsan is a rapid, safe, and effective treatment of syphilis. That it affords a permanent cure it is as yet impossible to say, but from our present knowledge it appears to me the most satisfactory method of treatment.

Harley-street, W.

ON THE

PRACTICAL RESULTS OF THE RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.[1]

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I WOULD, in the first place, insist upon the importance of a wide recognition of the advances which have been made in the diagnosis and in the pathogeny of syphilis as well as in its treatment. The work of Roux and Metchnikoff, of Neisser, Ehrlich, and many others has brought to fruition the epoch-marking discovery of the spirochæta pallida by Schaudinn, a discovery not less important to the community

[1] Abstract of a paper read before the Plymouth Medical Society on Dec. 16th, 1911. The paper was illustrated by photographs and coloured drawings of patients.

than the discovery of the bacillus tuberculosis by Robert Koch.

Although Metchnikoff and Roux had shown that syphilis could be produced experimentally in the chimpanzee shortly before Schaudinn and Hoffman published their discovery of the spirochæta pallida, that discovery made it possible to extend and develop the lines of experiment. Neisser has shown that the spirochætæ leave the site of infection very soon after inoculation, and only by excising the primary lesion within 12 hours was he able to prevent general infection. Levaditi and others have demonstrated that the organisms spread along the lymphatics and the perivascular spaces and also by the blood stream. By the inoculation of animals with the discharge from the primary sore it is easy to demonstrate its infectivity, and, as we should have expected on clinical grounds, mucous patches and condylomata are infectious in a high degree. On clinical grounds, however, it has long been held that tertiary lesions are not infectious, but Finger and Landsteiner were able to infect a monkey from the lesions of a patient whose primary sore dated back 12 years. Neisser and others have confirmed these observations. These positive findings are of great practical importance, as they show that the spirochætæ are present in tertiary lesions.

It has been found very difficult to infect the ape with the blood of a syphilitic subject, but the semen has been shown to convey the infection, while the secretion of the mammary gland of a syphilitic nursing woman does not. To Neisser we owe the demonstration of the infectivity of the nasal discharge of infants suffering from congenital syphilis.

Diagnosis.

The demonstration of the spirochæta pallida is best performed by dark background illumination. There is now no need to apply elaborate methods of staining. [The technique of dark background illumination was here explained and photographs of preparations made by Dr. James McIntosh were demonstrated. The importance of a sufficiently intense illumination was insisted upon, the examination being most conveniently made with a one-sixth power and a high eyepiece.] Some experience is necessary to distinguish the spirochæta of syphilis from some other spirillar organisms, but with a little training the examination can be made in a few minutes. The most satisfactory conditions for a successful examination are the removal of a small quantity of the serum from an untreated chancre, obtained by pressing the part after cleansing the surface with saline. The spirochætæ can also be demonstrated in the exudation from condylomata, mucous patches, and from ulcerating secondary lesions. In the other secondary eruptions the method is of little practical value.

While every practitioner cannot be expected to have the necessary knowledge for making these examinations, it ought not to be beyond the range of practical politics for the health authorities in every town at least to be able to give the required assistance to the practitioner, just as is done in the recognition of the Klebs-Löffler bacillus in diphtheria. The practical importance of the early recognition of the disease will be more apparent on consideration of some of the later observations. It will simply be necessary here to remark that as far as possible all cases should be treated in the primary stage.

The Indian ink method of Burri for the demonstration of the spirochæta has the advantage of simplicity. A drop of the serum from a chancre being mixed with a drop of sterilised Günther-Wagner Indian ink is examined after drying with an oil-immersion lens. Owing to the differences in the thickness of the film Dr. McIntosh and Dr. Paul Fildes consider that this method is open to objection because a thin film makes the parasites appear thicker, and in a thick film they appear thinner, and, moreover, the characteristic movements of the spirochætæ as observed with dark background illumination are absent.

The influence of salvarsan on the spirochætæ in a primary sore is remarkable. It is common to find the serum of a chancre in which spirochætæ were in large numbers entirely free from parasites 8 to 12 hours after injection. Such a result is of the highest importance in preventing the spread of the disease.

The Wassermann Reaction.

[The technique of the Wassermann reaction was here described, and the explanations which have been given of its meaning were considered. Dr. Sequeira remarked upon the increased accuracy which had been developed by the quantitative observations of Boas, observations which had been carried out in a number of cases under his care by Dr. McIntosh and Dr. Fildes in the bacteriological department of the London Hospital. The practical value of the reaction was unquestionable provided the principles laid down by Wassermann, Neisser, and Bruck were observed.]

In primary syphilis the utility of the Wassermann reaction is usually underestimated. With the more exact methods now in use McIntosh and Fildes were able to obtain a positive reaction in 24 out of 25 cases. Taking a large number of observations, Boas found that a positive reaction may be expected in 75 per cent. of primary cases. A positive reaction may be obtained as early as five weeks after *infection*, and is usually present nine weeks after infection. (N.B. This is the time after exposure to infection and not after the appearance of the chancre.) In secondary syphilis a positive reaction is obtained in 90 per cent. of the cases examined, but Boas with his more careful technique did not get a single negative result in 250 cases. In tertiary syphilis 63 per cent. of the cases give a positive reaction, but it must be remembered here that treatment must be taken into account. In congenital syphilis a positive reaction is practically constant.

The simple recapitulation of these facts is sufficient to demonstrate the value of the test, and we have only to remember that there are two other conditions occurring in this country in which a positive Wassermann reaction may be obtained, and those are leprosy, more commonly in the nodular than in the anæsthetic variety, and a transitory reaction in about 5 per cent. of the cases of scarlet fever.

The value of the Wassermann reaction is constantly brought home to those practising in dermatology, and especially in the differential diagnosis between syphilitic and tuberculous eruptions. It should be possible to make such arrangements with local authorities that a practitioner could obtain anywhere the assistance given by this examination. The blood is easily taken and can be sent through the post in suitable vessels, and it is of as much importance to the community that syphilis should be diagnosed early and correctly as typhoid fever. No difficulties are in the way of the practitioner in obtaining a Widal examination, and there should be equal facilities for the estimation of the Wassermann reaction. In some of our more enlightened colonies the Wassermann reaction can already be obtained without difficulty by any practitioner having a doubtful case.

The Influence of Treatment on the Wassermann Reaction.

Mercury.—Nearly every case of syphilis is influenced by mercury. A positive Wassermann reaction may be expected to become negative in a definite proportion of cases after one course of treatment, and the percentage rapidly rises with repeated courses. Harrison's statistics are most important and illustrative in this connexion. They are clearly shown in the following table:—

Effect of Courses of Lambkin's Cream.

After 1 course	83 per cent. still positive.	
,, 2 courses	77	,,
,, 3 ,, ...	64	,,
,, 8 or more courses	21	,,

That is to say, that after eight courses 21 per cent. showed by the Wassermann test that they were still syphilitic.

McIntosh found as the result of the examination of 160 cases treated by Hutchinson's pills, that after one year's treatment a positive reaction was obtained in 92 per cent.; after two years' treatment in 54 per cent.; and after more than two years' treatment in 30 yer cent.

The earlier and the more energetic the treatment the greater proportion of negative reactions. This last point is of the highest practical importance and should certainly lead to the abandonment of the old practice of waiting for the development of the secondary symptoms. We cannot start our treatment too early.

Iodide of potassium.—Though it has not received so much attention it has been shown that iodide of potassium has a definite effect upon the Wassermann reaction, but not in all cases.

Arsenic.—In the form of Fowler's solution administered orally Boas was able to obtain a negative reaction in 6 out of 11 cases.

The effects of the Wassermann reaction in the more recent use of arsenic in the form of salvarsan have been very closely studied. McIntosh and Fildes have carefully followed a

number of cases treated at the London Hospital, and they arrived at the following conclusions.[2] Intramuscular and subcutaneous injections were first used. In primary syphilis no case failed to become negative, the average time being five weeks. In secondary syphilis one-third of the cases failed to become negative. Where a negative result was obtained the average time was 8 weeks. In tertiary syphilis only one case became negative. It is, therefore, obvious that the longer the infection the more difficult it is to influence the Wassermann reaction by treatment. With intravenous and intramuscular injections combined, no case of secondary syphilis failed to become negative. The average time was 6½ weeks. In tertiary syphilis nearly one half of the cases gave a negative reaction. There is no doubt, therefore, that the intravenous method is more effective than the intramuscular or subcutaneous. As large doses as are compatible with safety are indicated as early as the diagnosis is made, with a view to preventing the development of a strain of spirochætæ resistant to the drug.

Administration of Salvarsan.

[The administration of salvarsan was next considered, and the apparatus in use at the London Hospital, devised by Dr. McIntosh and Dr. Fildes, was demonstrated.]

In the McIntosh and Fildes apparatus the injection is introduced by air-pressure, the pressure being supplied by a rubber pump connected with a bottle containing the solution. The air from the pump is passed through sterile cotton wool. The apparatus is portable, and all its parts can be sterilised and brought to the bedside of the patient in a sterile condition. It is important to observe care in the preparation of the solution, especially in its neutralisation with alkali, its freedom from undissolved particles, and its proper dilution, several of the fatalities following its use being due to the absence of these precautions. The directions given by the makers should be followed with scrupulous attention.

It has now been shown possible to eliminate almost all the untoward after-effects of the intravenous injection—viz., shivering, pyrexia, and vomiting—by the use of a saline made from freshly distilled water. It is believed that ordinary distilled water contains matter, whether bacterial or other, which is responsible for these immediate after-effects. Pyrexia, shivering, &c., have been produced in my clinic in non-syphilitic patients by the injection of 300 c.c. of normal saline prepared in the usual way. These observations have been made by my former clinical assistant Mr. H. Dearden in conjunction with Dr. McIntosh and Dr. Fildes. It is now the exception with the use of saline made with redistilled water to see any rigors, pyrexia, or vomiting after the intravenous injection of salvarsan.

[The fatalities observed after the use of salvarsan were commented upon, and it was shown that a number of them were undoubtedly due to faulty technique, e.g.: (1) failure to neutralise the highly toxic acid solution; (2) insufficient dilution; (3) sepsis leading to thrombosis and embolism; and (4) failure to insist upon patients being kept at rest after the injections. In other cases the drug had been used in unsuitable cases, moribund infants, general paralysis, extreme cachexia, and grave non-syphilitic visceral disease.]

It can be stated on the authority of the agents of the manufacturers that about a million doses of salvarsan have been sold, and presuming that half a million subjects have received injections, it becomes obvious that the mortality cannot be so high as certain authors suggest. Naturally all the fatal cases have not come to light, but supposing even 50 fatalities have occurred the mortality will not be more than 0·01 per cent., and this with a potent drug requiring a careful technique and selection of cases still in the experimental stage cannot be considered high.

The important question of the permanence of the results cannot be settled yet. Definite clinical relapses undoubtedly follow the use of salvarsan. In one case at the London Hospital, after apparent cure, the patient had a return to a positive Wassermann reaction after 36 weeks, in another after 16 weeks. During the period of observation I have not interfered with the effect of the new remedy by the administration of mercury for fear of confusing the issue. There can of course be no reason why mercury should not be given to supplement the effect of the salvarsan, and it may perhaps be ultimately proved that this is the best method of treating syphilis, and it is now advocated by many eminent authorities.

Conclusions.

My own conclusions I may summarise as follows:—

1. The early diagnosis of syphilis is of the utmost importance (*a*) to prevent the spread of the infection, and (*b*) for efficient treatment. Treatment should be begun in the primary stage. There should be no waiting for secondaries.

2. A doubtful chancre should be examined for spirochætæ. The dark background illumination method affords a reliable means provided the lesion has been untreated. Such an examination ought to be within the reach of all patients in the towns and might be arranged for by the health officer.

3. The Wassermann reaction is of the highest utility in the diagnosis of secondary and tertiary eruptions. If carried out by the improved technique practically every secondary case gives a positive reaction. The reaction is also of value in determining and estimating the effect of treatment. The Wassermann reaction ought to be as much within the reach of every patient as is the Widal reaction or the examination of diphtheritic swabs.

4. Treatment by mercury is undoubtedly efficacious. Nearly every case is influenced. After eight or more courses of injections 21 per cent. of the patients still have a positive Wassermann reaction. After two or more years' treatment by mercurial pills 30 per cent. give a positive Wassermann reaction. In the latter case it is naturally extremely difficult to be sure that the patient takes the remedy.

5. As regards salvarsan the danger is not great in properly selected cases. With rigid precautions taken in the preparation of the injections and with an aseptic technique the intravenous method has many advantages. The use of redistilled saline eliminates the pyrexia, rigors, vomiting, and other unpleasant symptoms in nearly every case.

6 The immediate effects of salvarsan both on the clinical manifestations of the disease and on the Wassermann reaction are far more rapid than are those of mercury. The ultimate effects in primary syphilis are remarkable; in early cases the secondary stage may be aborted. The effects in well-developed secondary syphilis are less striking and relapses certainly occur, and it remains for time to show the permanence of the results. In tertiary syphilis healing is extraordinarily rapid, but the Wassermann reaction is difficult to alter and relapses are likely to occur.

7. Everything points to the importance of early diagnosis and early treatment.

I am indebted to Dr. McIntosh and Dr. Fildes for many observations made in this paper. Their work has been most carefully carried out, and I am glad to know that it is now generally available through their valuable monograph.

Manchester-square, W.

[2] For fuller details see their monograph "Syphilis from the Modern Standpoint," published by Arnold. See also THE LANCET, vol. ii., 1910, p. 1684; vol. ii., 1911, p. 213.

INTESTINAL MYIASIS.

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CASES of intestinal myiasis in this country are sufficiently interesting and uncommon to be worth recording. I met with one last summer, of which the following is a short account, necessarily incomplete because the mother of the child never came back to tell me how the case ended, nor gave me the further information which I had asked for.

Notes of case.—The child, a boy, aged 1 year and 2 months, was brought because his mother, very much alarmed, noticed that on Sept. 29th, when she lifted him up from the bed, there were a number of living "worms" under a small piece of flannel upon which he had been lying. More of these were found whenever he was left on the bed, though none were noticed elsewhere. The greatest number, probably about 50, were seen in the morning, and always under the flannel or mackintosh upon which he had been left all night. Fewer were found in the same situation during the day. They were still being found in about the same numbers when I saw the child on Oct. 2nd. The mother said that there were never any in the napkin, and that the stools were always free from them; this was certainly the case in the one which I saw, and they were found even when the child had not passed a motion. The infant, though rather poorly nourished, had

remained in his usual health and had had no sickness, constipation, diarrhœa, abdominal pain, or loss of appetite.

The "worms"—obviously dipterous larvæ, of which the mother brought about 40 in a bottle—were very active at first, but unfortunately they died before I reached home, probably poisoned by something in the bottle. I was therefore unable to breed any of the flies, but Mr. E. E. Austen, of the British Museum (Natural History), kindly examined them and identified them as larvæ of Musca domestica, Linn., the common house-fly, and one larva of Fannia canicularis, Linn., the small house-fly. He said that they were in their last instar and were probably full-grown. There is little doubt that they had left the child voluntarily, and had crawled under the piece of flannel, seeking a suitable place in which to pupate. The patient's mother said that she had not noticed many flies in the house, and that all the food was kept in a cupboard on the landing, outside the room.

Remarks.—Though Musca domestica is one of the insects which are most commonly concerned in these cases of accidental parasitism, I can only find ten recorded cases. In his paper read before the Entomological Society of London, 1837, the Rev. F. W. Hope collected three cases, in two of which the larvæ were vomited. Robineau Desvoidy in 1849 described a case with headache, vertigo, and vomiting, which ended in death. In Lublinski's case in 1885 full-fed larvæ of Musca domestica were vomited. W. M. Jones records a case which occurred in Sheffield of a man, aged 52, who passed 20 larvæ of this fly per anum; and Wirsung in 1906 gives two German cases, one in a breast-fed child aged 5 months, and the other, in which the species is more doubtful, in a child 1 year old. Mr. Austen tells me that he knows of a recent case in which larvæ of both Musca domestica and Fannia canicularis were passed together by a young baby. This is the only case I have heard of exactly like mine.

The dipterous larva most commonly found in the intestinal tract in temperate regions is that of Fannia canicularis (formerly known as Homalomyia or Anthomyia canicularis). The allied F. scalaris sometimes occurs, and Czokov records a case in which both were found. F. canicularis has also been found in company with Musca corvina and Calliphora vomitoria, the bluebottle fly. Many other species have been found in cases in temperate countries, but the condition is probably much commoner in the tropics.

One of the most curious is the rat-tailed larva of the drone-fly, Eristalis tenax, Linn., of which I find four certain and one probable case in the literature. One occurred in a child aged 1 year and 6 months, and in an Italian case it was associated with the larva of Calliphora vomitoria.

Larvæ of the following flies have been found in cases of intestinal myiasis in Europe and North America, in which the species concerned has been identified:—

Stratomyidæ.—Microchrysa (Chrysomyia) polita, Linn.
Syrphidæ.—Eristalis tenax, Linn.; Helophilus pendulus, Linn.
Œstridæ.—Tachina (Musca) larvarum, Linn.; Gastrophilus equi, Fabr., or an allied species
Sarcophagidæ.—Sarcophaga (Musca) carnaria, Linn., S. hæmatodes, Meig., S. hæmorrhoidalis, Fall.; Wohlfahrtia (Sarcophila) magnifica, Schiner.
Muscidæ.—Musca corvnia, Fabr.; M. domestica, Linn.; Lucilia (Musca) cæsar, Linn., L. regina, Macy., possibly intended for Phormia (Lucilia) regina, Meig.; Calliphora (Musca) vomitoria, Linn.
Anthomyidæ.—Fannia (Anthomyia, Homalomyia) scalaris, Fabr., F. saltatrix R.D. = scalaris, F. canicularis, Linn., F. incisurata, Zett., F. manicata, Meig.; Allognota agromyzina, Fall., is perhaps the species recorded as Musca nigra.
Micropezidæ.—Calobata (Musca) cibaria, Linn.
Piophilidæ.—Piophila casei, Linn.
Geomyzidæ.—Teichomyza fusca, Meq.

Their presence usually causes only slight symptoms, and even in cases where thousands of larvæ are passed those most common are anorexia, nausea, colicky pain, and constipation or diarrhœa. In the more severe cases there may be vomiting (hæmatemesis has been noticed once) and diarrhœa of dysenteric character, sometimes accompanied by the passage of a little blood, and in one instance true melæna. Nervous symptoms—such as headache, vertigo, and epileptiform convulsions, which ceased with the expulsion of the larvæ—have been observed in a few cases. Chichester records one in 1806, in a boy aged 14, who had urticaria, violent abdominal pain, vomiting, hæmatemesis, and inability to speak or swallow owing to pharyngeal and œsophageal spasm; later there was loss of consciousness.

Death has occurred in four cases, but the proof that the larvæ were the direct cause is not very convincing in two of these.

There is still a little doubt as to how the larvæ gain access to the intestinal tract. It is generally supposed that ova laid on dressed meat, over-ripe fruit, sour bread, cheese, unboiled vegetables, or watercress by the various species of fly, each on the food suitable for its larva, are ingested, or in such a species as Eristalis tenax and Helophilus pendulus ova or young larvæ may be taken into the stomach in dirty water or with watercress.

It is possible, but most unlikely, in view of the strong instinct which leads almost all insects to lay their eggs on food suitable for the larva, that the fly ever lays its eggs directly on the living person, especially in such species as Eristalis tenax, the drone fly, and the black and yellow hover fly, Helophilus pendulus, or Piophilus casei, the cheese fly. The number of larvæ, several thousand, passed in some cases is far too great for one fly to lay at one time. The house-fly, for example, usually only lays its eggs in batches of about 120 to 150. But one of the strongest proofs that the ova are ingested is the comparative frequency with which the larvæ of two species of fly have been found associated, and which makes it almost certain they obtained ingress in no other way. The fact that in many instances the larvæ are only vomited also suggests that they were taken in by the mouth and developed in the stomach, as occurs normally in Gastrophilus. Chatin experimented with larvæ of Teichomyza fusca from a case of his, and he found that they not only lived for several days completely immersed in water or oil, but also survived when introduced into the stomachs of various mammals, and he proved their power of resistance to the gastric juice and small need of oxygen.

Jepson has shown that in the case of the house-fly development at 70° F. is very rapid. The ova hatch in 24 hours and the larvæ attain their full growth in 11 days, and in the hotter climate of India and Ceylon they are fully developed in 5 days. In the high temperature of the intestine it is probably as rapid as in India.

In many instances the source of infection has been traced with some certainty to tainted food, and in Hutton's case ova or larvæ of Eristalis tenax were probably swallowed in water from a golf course.

Pasquale has given the most convincing instance. He had four cases in Italian soldiers, and in the case of one of them he found that in a heap of potatoes—some of which the man had eaten, and which were beginning to decay in parts—there were larvæ identical with those passed by the soldier. The man had probably eaten them as ova, and the resulting larvæ had developed in his intestine synchronously with those in the uneaten potatoes.

The cases most difficult to explain are those in which larvæ have been passed for some months, and in two cases for some years, though in one of these there were fewer in the winter. These are almost certainly cases in which the source of infection has not been discovered, and ova have been taken into the body at frequent intervals. Even Cairns's case (which lasted for three years and in which as many as 1000 larvæ were passed in a single day) and Blankmeyer's case (which lasted 12 years) can be explained in this way, since Jepson has shown that even in this country house-flies will lay their eggs all through the winter and the larvæ will develop successfully if the conditions are favourable.

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DOUBLE COXA VARA WITH OTHER DEFORMITIES OCCURRING IN BROTHER AND SISTER.

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THE two children who are the subjects of this communication present a peculiar collection of skeletal deformities for which it is difficult to find a satisfactory etiology. The girl, aged 9, came under observation for a well-marked double coxa vara. The parents gave a history of pains in the back and an alteration in her gait dating back 18 months only. On examining her it was found that besides the hip affection she had abnormally short arms, many joints that were enlarged or creaked on movement, and eversion of the feet. (See Fig. 1.) Systematic examination of the bones with the X rays revealed deficient, unequal, and in some cases divided development of many of the epiphyses. Inquiry of the parents elicited the fact that a younger brother, aged 6½, had lately shown signs of lameness. He was admitted to the hospital and was found to have double coxa vara of a milder degree, and also a forward luxation of the upper ends of both radii. With the X rays it was seen that ossification in most of the bones was considerably advanced for his age. Brief notes of the cases are as follows:—

CASE 1.—A female, aged 9, was admitted to the Hospital for Sick Children, Great Ormond-street, on Nov. 26th, 1910, under the care of Mr. H. A. T. Fairbank. Her parents gave the history that for the last 18 months she had complained of pains in the back after exertion and became easily tired. Pains in the joints had not been a symptom. Her previous health had been good. There was an indefinite history of a fall when a few months old. As regards family history both father and mother were healthy. A grandmother had died from consumption. There was no history of syphilis or gonorrhœa. There were seven children, one dead from whooping-cough. The eldest, a girl aged 14, suffered from heart disease and rheumatism. The others, except Case 2, were healthy and normal in every way. There had been no miscarriages.

On examination it was found that the patient's general appearance was that of a particularly bright and intelligent child of a short and stumpy conformation. All the joints of the extremities were rather prominent. (Fig. 1.) The upper and lower limbs looked short in comparison with the trunk. The trochanters were very prominent, and there was some lordosis. Both femora showed well-marked coxa vara. The trochanters stood out prominently and were displaced upwards, on the right side to half an inch below, and on the left side to the level of the anterior superior spine. The subpubic angle was much increased. At the right hip-joint flexion and slight extension were possible, and to a very slight degree abduction and external rotation. No other movements were allowed. The left lower limb was held slightly abducted. No movements took place at the left hip except flexion and a little extension. Creaking could be felt in both joints. The knee-joints were in keeping with the other joints in being somewhat prominent. The enlargement was abrupt and irregular, rather than fusiform. The movements were free, and except creaking there was nothing further to note. Both feet were everted, but the arch was good and there was no flat-foot.

In the upper extremity the shortness of the limbs was obvious, in the vertical position the finger tips only reaching to 3½ inches below the tips of the trochanters. In a healthy boy of nearly the same age and size the fingers reached to 6½ inches below the upper limit of the trochanters. The shoulders were normal, except for the adventitious sounds on movement. The elbows were symmetrically enlarged. At the elbow flexion and extension could be performed perfectly, but pronation and supination were incomplete. There was considerable thickening of the internal condyle and the head of the radius could be luxated slightly forwards by pressing from behind. Crackling could be felt on movement. The wrists were rather larger than normal, but there was no alteration in bony points or movements. The fingers were short and flat, with prominent interphalangeal joints. Flexion was freely performed at the interphalangeal joints, but could not take place at the metacarpo-phalangeal. In other words, as the patient herself vouchsafed, she "could not make a fist." This is interesting, inasmuch as her brother (Case 2) presented a similar deformity. The parents stated that this condition had been present since birth. The X rays did not give any clue to the cause of this disability. The movements of all the joints were entirely painless. The circulatory and respiratory systems were normal. The teeth were good; there was no digestive disturbance. There were a few small glands palpable on the right side of the neck, but the rest of the body was free, and the spleen was not enlarged.

CASE 2.—A male, aged 6½, came under observation on Dec. 24th, 1910. In the course of questions concerning the family history of Case 1 it was ascertained that another child had developed lately a peculiar gait. He was accordingly brought to the Hospital for Sick Children and admitted under the care of Mr. Fairbank. It was then found that he was the subject of coxa vara also. The history given was that the change was noticed first ten months previously. No cause could be assigned. The patient had been otherwise perfectly healthy in every respect. He looked a healthy and intelligent boy, without any signs of deformity excepting enlargement of the elbow-joints, a tendency to lean forwards when standing due to slight flexion at the hips, and an almost waddling gait. The left lower limb had half an inch of shortening; the trochanter was displaced above Nélaton's line to half an inch below the level of the anterior superior spine; abduction was slightly, rotation inwards greatly, limited. On the right side the trochanter was displaced upwards to 1 inch below the level of the anterior superior spine. Both the trochanters were prominent, and both hips slightly flexed, but there was no true lordosis.

In the upper extremities interest centred chiefly on the elbows. It was found that there was a forward luxation of the upper ends of both radii. (Fig. 5.) The upper end of the radius formed a visible projection in front of the external condyle and could be grasped easily between the finger and thumb, and the finger could be inserted into the concave upper surface of the radial head. All movements were performed well, and the boy had perfectly useful joints. The condition was quite symmetrical on both sides. The interphalangeal joints of the fingers were prominent, especially in the case of the middle finger of the left hand. As in Case 1, flexion could be performed at the interphalangeal joints, but not at the metacarpo-phalangeal. The spine, ribs, and clavicles were normal. The teeth were good and the cardiac and respiratory systems were sound. There were no enlarged glands, and the spleen was not enlarged.

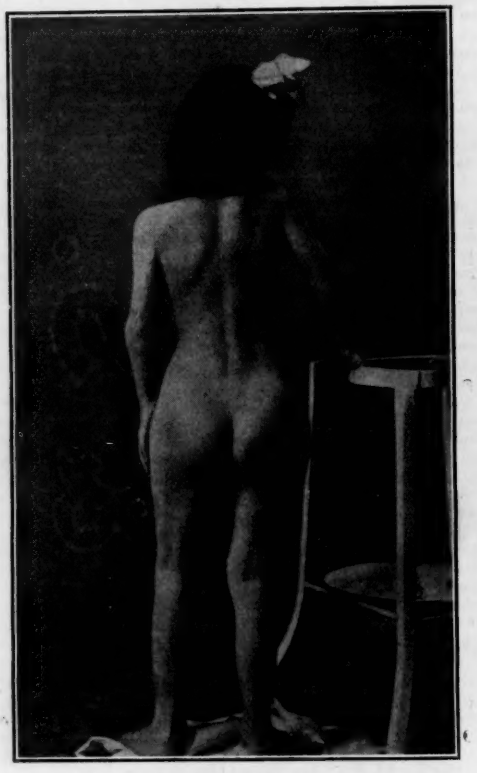
It is on examining the skiagrams that the peculiarities of the cases are manifest. Unless stated to the contrary, it may be taken that the abnormalities are the same on both sides, differing only in degree.

In the hip-joint of Case 1 the epiphysis is quite undeveloped and appears as a thin scale-like shadow in the acetabulum. The neck, on the other hand, is greatly thickened, giving the impression of considerable bony proliferation. The edge of the acetabulum is woolly and indistinct. The shaft of the femur is abnormally thin.

In the lateral view of the knee-joint the curious condition of the patella is seen. (Fig. 2). It appears to be ossifying in four separate and unequal portions. In the antero-posterior view the outline of the patella can be distinguished over the external condyle. On the inner side is an apparent loose body with a corresponding depression in the inner condyle. It is difficult to explain this except perhaps as a separately ossifying part of the femoral epiphysis. Were the patella not to be seen on the outer side, it might be taken as one of the parts of that bone seen in the preceding skiagram.

The skiagram of the tarsus shows the advanced ossification of the bones. (Fig. 3.) But, in addition, there is seen a new

FIG. 1.



Reproduction of photograph of Case 1, showing the prominence of the joints, the shortness of the arms, and the deformity of the hips.

FIG. 2.

Skiagram of left knee-joint, Case 1, showing the patella ossifying from four centres.

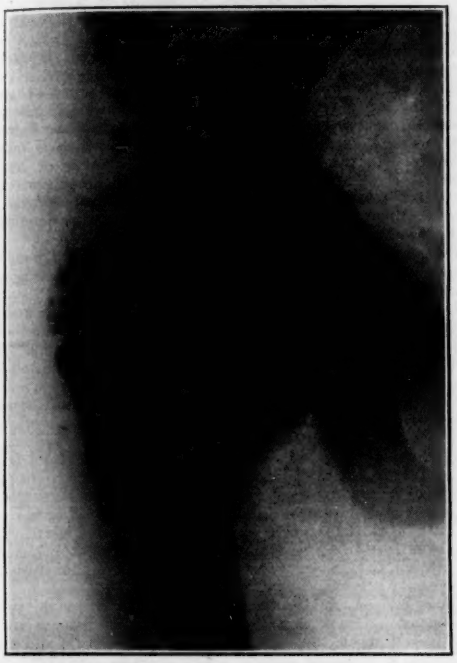
FIG. 3.

Skiagram of right foot, Case 1. The extra-tarsal bone is well seen between the scaphoid and internal cuneiform bones. The ossification is advanced for the age.

element in the shape of a wedge-shaped piece of bone intervening between the scaphoid and the internal cuneiform. This may be regarded from its outline as a separate part of the cuneiform. It is only present on the right side.

Ossification appears advanced in the skiagram of the wrist and hand. At the lower end of the radius is seen a rarefied area sharply marked off from the rest of the shaft. The

FIG. 4.



Skiagram of right hip-joint, Case 2, showing (1) flattened undeveloped epiphysis of the head of the femur, and (2) expansion and overgrowth of the neck.

semilunar bone of the wrist appears to be displaced upwards, for its shadow distinctly overlaps that of the radius. The lower epiphysis of the ulna is unduly small.

The skiagrams of the hips of Case 2 show the undeveloped scale-like epiphysis of the head set on a greatly expanded neck. (Fig. 4.) The epiphysis is displaced upwards and the neck appears to have proliferated beneath it to meet the acetabulum. In the skiagram of the knee the patella does not appear as a shadow at all. Both femoral and tibial epiphyses have an indistinct outline. On the other hand, the bones of the feet are as much ossified as those of a child some years older. The skigrams of the elbow-joints show clearly the forward luxation of the upper ends of both radii and the delayed ossification of the radial epiphysis. (Fig. 5.)

To sum up, the most interesting point in these cases is the general advance of ossification in the diaphyses, and the unequal, deficient, and, in some instances, divided development of the epiphyses of many of the bones. At first sight the clinical appearance was not unlike the osteo-arthritis occasionally met with in children. The stiffness and enlargement of some of the joints, the creaking, the coxa vara, the deficient movement at the elbows, and the fingers rather suggested it. The enlargement of the joints was slight; they are described best as prominent; they did not approach the fusiform shape that characterises rheumatoid arthritis. Moreover, the increase in size was due to slight enlargement of the ends of the bones, not to peri-articular thickening. Rickets did not seem a reasonable explanation. The X ray appearances are quite unlike rickets. Still's disease, also, could be excluded. Except for their deformities the children always have been and are in perfect health. No general enlargement of glands or of the spleen could be detected.

The shortness of the arms in Case 1 and the mental characteristics of both suggested achondroplasia, but the history alone, apart from the absence of the other distinguishing features, negatived that. The phalanges were not sufficiently enlarged to merit the term of "clubbed digits," but some of the changes shown by the X rays rather resemble those of osteo-arthropathy—Marie's sign group. Bamberger has described thickening of the ends of the shafts of long bones and also rarefaction with erosion of the articular cartilages. This is not unlike what has occurred in the lower end of the radius in Case 1. The absence, however, of the typical clubbed digits enables us to exclude that affection. It was not until systematic examination of the osseous system was made with the X rays that a fuller knowledge of their peculiarities was revealed. It was then seen that a large number of the epiphyses were abnormal. In the knee-joint the patella is ossifying in several parts; a small portion of the lower epiphysis of the femur is separate. In the tarsus there is an extratarsal bone, probably a part of the internal cuneiform developing from a separate centre. It is not very uncommon for this bone to develop in two parts.

The double luxation of the radius in Case 2 is undoubtedly of a congenital nature, and we are justified in assuming, I think, that this is not a separate condition, but that it has a bearing on the case as a whole. In a case recently reported Belot and Chaperon attributed the double luxation to the dystrophic action of hereditary syphilis. There is nothing either in the history or the physical appearance of these children to support that theory.

Maldevelopment of the epiphyseal ends of bone is always a factor to be considered in the causation of congenital dislocation of joints. It has been given as a cause in congenital dislocation of the hip by Bowlby and Lockwood, and some cases of congenital dislocation of the shoulder are due to deformity or absence of the glenoid.

FIG. 5.

Skiagram of right elbow-joint, Case 2, lateral view. The dislocation of the head of the radius is well shown.

That the epiphyseal development is, in part at least, abnormal in these cases is, I think, clear. What the real etiology of this abnormality is remains doubtful.

I am much indebted to Mr. Fairbank for permission to publish these cases, and also to Dr. W. Ironside Bruce for taking the skiagrams and assisting in their interpretation.

Great Ormond-street, W.C.

THE FUNCTIONS OF THE TONSILS AND THE APPENDIX.

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IN the investigation of acquired immunity far more attention and investigation have been given to the modes of action of various antibodies in the blood stream than to the tissues in which they have been produced. But there are fairly good reasons for supposing that the spleen, the bone-marrow, and the lymphatic glands are the chief anti-bacterial workshops.

In this note it is proposed to deal only with a group of lymphatic structures whose antibacterial activity is not commonly considered, and, indeed, is hardly recognised. These lie close to the surface of the body, and can be called the subepithelial lymphatic glands. In this group are included the tonsils—nasopharyngeal, faucial, and lingual, the solitary follicles of the intestine, Peyer's patches, and the vermiform appendix.

The hypothesis to be advanced here is that these particular lymphatic structures protect the body against chance infection by a process of continual auto-vaccinations. Any bacteria in the vicinity are attracted by positive chemiotaxis through the overlying epithelium into the lymphatic nodule. The bacterial attack, having been invited in a region most favourable to the defensive mechanisms of the body, is nearly always repulsed. In accordance with that over-production which is so characteristic of biological response, specially trained lymphocytes and a great excess of specific bacteriolysins and antitoxins are produced. These enter the general system and lessen the risk of a successful bacterial infection at a more vulnerable part. Thus, more or less immunity against organisms is acquired by the individual without his obviously suffering from disease. On rare occasions the lymph nodule is overcome and the disease develops; but the body has meanwhile become better able to withstand a general invasion.

The facts in favour of this hypothesis are as follows:—

Anatomical.—1. *Position* of the subepithelial glands. The lymph nodules are placed directly beneath the epithelium. They are superficial even to the fibres of the muscularis mucosæ.

2. *Structure* of the subepithelial glands. Where the follicles are crowded together the overlying epithelium is folded into pits and recesses so that each lymph nodule subtends the surface. This is well seen in the nasopharyngeal and the faucial tonsils. There are no afferent lymphatic vessels.

3. *Distribution* of the subepithelial glands. They do not underlie the skin which is thick, resistant, and comparatively free from pyogenic organisms on the surface, but they are found in the throat and along the alimentary tract, where the mucous membrane is thin, permitting of absorption. Moreover, they occur exactly at those points where the micro-organisms flourish. The circumpharyngeal ring meets the bacteria entering with the food (and with the inspired air in the cases of mouth-breathers). The Peyer's patches, the appendix, and the solitary follicles are placed around the excellent incubating media in the ileum, cæcum, and ascending colon, precisely those parts which are swarming with organisms. The stomach, on the other hand, protected from bacterial growth in its contents by the acid nature of its secretion, is almost free from lymphatic tissue.

The whole anatomical arrangement of the subepithelial lymphatic glands is such as to bring them into close connexion with the chief collections of bacteria lying outside of, but adjacent to, the tissues.[1]

Clinical.—1. The subepithelial glands bear the *brunt of the attack* in faucial and intestinal infections. Scarlet fever, typhoid fever, and appendicitis are sound examples. In infantile enteritis the Peyer's patches are swollen and infected.

2. The subepithelial glands are largest and most active in young children at a period when individuals are acquiring immunity to the various common infections. In old age all lymphatic structures tend to atrophy.

3. The subepithelial glands hypertrophy as a result of repeated infectious diseases. Whooping-cough, scarlet fever, measles, and "colds" (especially if associated with deficient exercise or unhygienic surroundings) lead to enlargement of tonsils and adenoids. General increase of lymphatic structures signifies prolonged bacterial assaults, and may be accompanied by a toxin-weakened heart—the so-called status lymphaticus.

4. It is often observed during scarlatinal epidemics that a person may apparently secure immunity by a very mild tonsillitis which is unaccompanied by rash, malaise, or other signs of general injury.

5. In fulminating infections, where septicæmia is early and fatal, the lymphatic reaction is poorly developed.

Thus clinical evidence provides abundant proof of the important part played by subepithelial lymphatic glands in bacterial infections. The glands are the tissues first affected and most involved. As a rule, the tissue which is most seriously attacked provides the greatest number of anti-bodies. For instance, the power of brain emulsions to neutralise tetanus toxin has been satisfactorily proved.[2] Finally, there is evidence that immunity can be acquired without the general development of the disease.

Pathological.—1. Paraffin sections of the faucial tonsils repeatedly show bacteria passing through the covering of stratified epithelium and entering the lymph nodes.

2. A larger number of mitoses are seen in the lymph nodes of subepithelial glands in certain infections.

3. The lymphocytes are formed in lymphatic glands. In faucial and intestinal infections these cells are increased in number in the blood. A lymphocytosis accompanies poly-nuclear leucocytosis in pyogenic inflammations, and occurs alone, or predominantly, in scarlet fever, measles, variola, infantile gastro-enteritis, some cases of diphtheria, pertussis, rickets, and syphilis. In enteric fever, although there is a diminution of the total number of white corpuscles, yet the lymphocytes are increased in number. The almost constant presence of lymphocytes about an infected area seems to indicate that these cells play an antibacterial part. In connexion with the greater activity of the lymphatic tissues in children, it is interesting to note that a lymphocytosis is more easily provoked in early life.

Biological.—1. In the fierce struggle for existence types possessing useless organs are little likely to perpetuate their kind. And when the organs are, like the tonsils and the appendix, so often the seat of deadly diseases, their eradication from the race would soon be brought about had they not a more than counterbalancing protective action for their owner. The argument is, admittedly, incomplete; but at least it is fair to say that, from a biological point of view, the probability is that both the appendix and the tonsils are of more value than current opinion allows.

2. The comparative anatomy of the subepithelial lymphatic glands has received very little study. If it should be found, as seems likely, that the lymphoid tissue is better developed in those animals, such as the herbivora, where the food takes longer to digest and so allows of extra bacterial growth, it would be another point in favour of the hypothesis.

If this hypothesis is accepted as a working one, it is natural to inquire how it should affect the treatment of disease.

In the first place, the surgeon will be more than ever disinclined to sacrifice the appendix or the tonsils and adenoids unless he is quite convinced that they are dangerous or injurious. When, however, appendicitis has definitely occurred once, it is so likely to recur, and the recurrence to prove dangerous, that the appendix should be removed even if the exterior appears healthy. Besides, there is still some lymphoid tissue left in the cæcum which may be equal to the increased demands upon it. But one wonders whether a few of the cases of coli bacilluria and cystitis are not due to previous disease or removal of the appendix.

Similarly, the obvious benefit of removing adenoids, which are completely obstructing nasal respiration, is so considerable that no surgeon should stay his hand for a theoretic disadvantage. But the removal of a slight enlargement of the naso-pharyngeal tonsil consequent upon an otorrhœa may deprive the patient of the means of vaccinating himself against the organisms in the pus escaping from the Eustachian tube.

[1] The Subepithelial Lymphatic Glands, Guy's Hospital Gazette, May 13th, 1911.

[2] Ehrlich: Studies on Immunity, Section XXXI., New York and London, 1906.

In the second place, the hypothesis may lead to fresh methods in preventive medicine. If during a scarlatinal epidemic a slight infection of the tonsils without a true attack will immunise the individual the physician may take charge of the process and apply infective material (in which the unidentified organisms have been destroyed by heating) to the tonsils of those not previously attacked. The dead organisms would be drawn into the lymphoid tissue and antibodies formed. Or feeding with dead typhoid bacilli might protect against typhoid fever. But these methods would have this danger, that the consequent reaction in the subepithelial glands, if too severe, might pave the way for a secondary infection.

The hypothesis would seem to have this merit, that its tenets and conclusions can be further investigated without great difficulty.

Bowdon, Cheshire.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

The Talma-Morison Operation.

A MEETING of this section was held on Jan. 9th, Mr. CLINTON T. DENT, the President, being in the chair.

Mr. RUTHERFORD MORISON read a paper on the Operative Cure of Ascites due to Liver Cirrhosis. He said that during a visit to the post-mortem room Dr. David Drummond showed him the body of a man dead from cirrhosis of the liver and explained that this patient had no ascites because the collateral circulation, chiefly through the enlarged veins of Sappey, had relieved the portal obstruction. He (Mr. Morison) suggested that if his explanation was correct, it might be possible to cure an existing ascites by an operation, which would establish a new anastomotic circulation. In regard to the ordinary connexions between the portal and systemic circulations, when adhesions form between the viscera and parietes, innumerable new vessels develop in them and convey blood freely from the portal into the systemic circulation through the subperitoneal plexus of veins. Probably the most important of these new channels could be developed in adhesions between the omentum and parietes. A study of Nature's methods suggested that operation might be useful in selected cases, for they were familiar with the enormous newly-formed blood-vessels frequently met with in the portion of omentum adherent to rapidly growing abdominal tumours; they had seen adhesions of all sorts in the abdomen develop large vascular channels, and they knew that such vascular adhesions could form with considerable rapidity. Other factors besides mechanical obstruction of the portal vein doubtless aided the development or retarded the arrest of ascites due to cirrhosis; but his cases proved at least that the establishment of an artificial circulation could cure it. Experience had confirmed that view, but, as he had always been careful to point out, the cases in which operation could be of use were rare and must be carefully selected. So far as he knew, the most suitable were those of alcoholic cirrhosis in patients otherwise sound, and whom repeated tapping had failed to cure. None of those cases had in their experience been failures. The reason probably was similar to that of the cure of dropsy from heart failure following persistent over-strain. In both the chief predisposing cause of the dropsy could be removed, in the case of the heart by rest, in the case of the liver by abstinence from alcohol. That explanation seemed probable because though he had operated upon patients in good condition with ascites due to syphilitic cirrhosis, none of them had been cured. The most unfavourable cases were those which at their commencement simulated an abdominal emergency and sufferred from pain and tense tympanites preceding the development of ascites. In operating, the choice of an anæsthetic might be of importance. The great danger in these cases appeared to be the development of a condition related to acute yellow atrophy, and chloroform, as was well known, could produce similar hanges in the liver, so that some other anæsthetic should be chosen. The abdominal incision should be made above the umbilicus to avoid the development of a ventral hernia. The steps of the operation were: (1) Open the abdomen from the ensiform cartilage to the umbilicus; (2) introduce the hand into the abdomen and project a finger against the anterior parietes in the middle line three inches above the pubis; (3) make a small incision on to the finger-tip, and through that introduce a long small glass drainage-tube into the recto-vesical or recto-uterine pouch; (4) dry the abdominal cavity and scrub the peritoneum with mops; (5) suture the omentum to the anterior parietal peritoneum across the abdominal wall and close the upper abdominal wound; (6) apply an antiseptic dressing over the wound and tube, and over this, from above down to the tube, a series of long circular strips of adhesive strapping, with the object of keeping the parietal in contact with the visceral peritoneum; (7) the tube now exposed through the dressings is surrounded with a sheet of dental rubber perforated to grasp it below the collar on it, and the separated tube dressing is wrapped up in the indiarubber sheet. For after-treatment a nurse was engaged to attend to the tube and pump off the fluid sufficiently frequently to keep the dressings dry. If that could be accomplished the dressings required no change for ten days, after which, as a rule, a small indiarubber tube could be made to take the place of the glass one. He had heard of septic peritonitis resulting from that operation. In Newcastle they had never seen that, and it might be that their free use of antiseptics during the operation and in the dressings was the explanation. As a rule the wounds were entirely healed in one month, and no further accumulation of fluid occurred. It need, however, occasion no serious disappointment if the fluid re-accumulated, as some of their most successful cases had required tapping on one or two occasions after recovery from the operation.

Dr. W. HALE WHITE said he agreed with Mr. Morison that the cases of cirrhosis for which this operation was suitable were rare; he would say they were extremely rare, and that other factors than pressure on the portal vein were usually operative in the production of ascites. He pointed out that none of the cases in which Mr. Morison claimed success were ordinary examples of cirrhosis. The operation would be even less used in the future, for the consumption of alcohol was decreasing, and only a quarter of those who had cirrhosis had ascites. That pressure on the portal vein was the chief factor in causing ascites was unlikely, for the effusion of fluid might be sudden; the liver might be very contracted without ascites; there might be ascites and yet the branches of the portal vein might be normal, and ligature of the portal vein usually did not cause ascites, or if a little fluid was poured out it was quickly re-absorbed. The ascites was probably toxic, and cirrhosis of the liver should be regarded as a local disease of the liver causing many general toxic symptoms. The poison produced by the liver was lymphagogue; hence swelling of the feet, certainly not due to pressure on the vena cava, pleural effusion, ascites, a raised temperature, and coma—all often seen in cirrhosis. The appearance of ascites was a serious symptom, for in uncomplicated cases it indicated that the end was not far off, nearly every patient being dead within two months of the appearance of the ascites; hence in uncomplicated cases operation was useless. As a rule, when a patient with cirrhosis survived many tappings, some contributory cause to the ascites was present. Further, it must be remembered that dogs in which a communication between the portal and general venous system had been made died.

Dr. H. D. ROLLESTON said that the rationale of the Talma-Morison operation was not, he believed, merely opening up a collateral circulation; if that was carried to excess the condition resembled that of Eck's fistula in which uræmic symptoms were apt to supervene. Patients after the Talma-Morison operation indeed might for some time exhibit some symptoms of mental disturbance. The increased anastomosis probably acted by diminishing the blood flow to the liver, and enabled the liver to deal more satisfactorily with the blood passing through it and so reduce the toxæmia which was probably the main cause of ascites. The changed blood-supply to the liver might so improve the nutrition of the liver cells as to allow compensatory hyperplasia of the liver cells. The operations consisting in permanent drainage into the subcutaneous tissues (Schiassi, Narath, Handley) or into the saphena vein (Routte, Celso) were on a different footing from

the Talma-Morison operation, as they did good by removing the fluid and could not be thought to improve the nutrition of the liver. Possibly those operations might act in the same way as autotherapy—i.e., injection of ascitic fluid into the subcutaneous tissues of a patient with cirrhotic ascites—did. The Talma-Morison operation was of value in selected cases—namely, cases in which ascites occurred in patients who were in such good condition that they could stand the operation, and in whom there was a sufficient amount of liver substance left to undergo compensatory hyperplasia and carry on the antitoxic functions of the liver. The contra-indications to the operation were: (1) an advanced stage of the disease as shown by debility, wasting, and considerable toxæmia; (2) considerable jaundice; and (3) definite kidney or heart disease. These cases were rare; they were presented by cases in which ascites appeared soon after hæmatemesis. His own experience was confined to three cases; one survived two and a half years, another about six months, and a third died soon after operation. He did not agree with Dr. Hale White's view that ascites in cirrhosis seldom or never required tapping more than once; he did not think that was quite correct.

Mr. H. J. WARING said that during the past 10 years he had frequently practised the operation of omentopexy. In his first cases he fixed the omentum to the parietal peritoneum, and in a few cases scarified the surface of the liver before fixing it to the deep aspect of the abdominal wall. In his later cases he had, after making a median incision, incised the umbilicus and then freely opened the rectus sheath on each side; a large portion of the great omentum was then spread out within the sheaths of the rectus on each side and anchored by a few sutures, taking care to avoid the inclusion of any of the large omental veins. In his opinion this procedure brought into contact a large area of the omentum with the superior and deep epigastric veins of the abdominal wall. The results obtained from this latter operation were far superior to those obtained by the former operation. He stated that the cases most suitable for the operation of omentopexy were comparatively early cases of ascites due to cirrhosis of the liver in patients who were not old and in whom there was no evidence of digestive disturbances consequent upon toxic absorption. Emaciated people the subjects of cirrhosis of the liver, especially those with jaundice, were entirely unsuitable for the operation.

Mr. W. SAMPSON HANDLEY, after referring to the reader of the paper as the pioneer in the successful treatment of ascites by operation, said he was inclined to think the drainage methods more recently developed at the Middlesex Hospital were preferable to epiplopexy. He admitted, however, that the materials for forming a judgment as to the best operative method in ascites were not yet to hand. He thought the cause of knowledge would be best served by a parallel development of the various methods in the hands of different surgeons. But in any case the surgical treatment of ascites, though applicable only in selected cases, had come to stay. The surgical methods used in ascites belonged to two categories. Either they aimed at diverting the blood current from the congested portal system to the systemic vessels or at facilitating the resorption of the ascitic fluid. The first method, that of Mr. Rutherford Morison, though at first sight more rational, could only reinforce a collateral circulation, which was anatomically known to be a free one. If it produced any large increase in the area of the collateral channels it brought with it the danger of intoxication by unfiltered intestinal products. He did not deny its success in certain cases, but he believed its effects were largely dependent upon the peritoneal drainage which accompanied it and upon the leakage of ascitic fluid into the subcutaneous tissues at the point of implantation of the omentum. If that was so the same effects could be secured more simply and safely by the drainage methods. He considered femoral drainage (Wynter's operation) as the operation of choice. When it failed drainage by silk threads (lymphangioplasty) should be used unless the ascitic fluid was being secreted at a very rapid rate. This had been the apparent cause of failure in two of his cases. The first case in which lymphangioplasty [1] was done had now remained well and able to work for two years, although she had not given up her alcoholic habits. Recently Mr. R. Atkinson Stoney had recorded a successful case. A third method consisted in implanting the saphenous vein into the peritoneal cavity. His experience of this operation consisted of one unrecorded failure in April, 1910. At the time he did not know that the operation had been tried. The valves of the vein proved to be incompetent, and bleeding occurred from its proximal end. The fourth method, recently recorded by a Dublin surgeon, consisted in implanting the external saphenous vein into one of the portal tributaries. The recorded case was a failure, but the method had future possibilities, though it brought with it the danger of toxæmia. In regard to autoserotherapy he wished physicians would try it for a while as a routine measure after tapping ascites.

Dr. W. ESSEX WYNTER said that the actual cause of ascites was too long and complicated a matter to go into at the moment; the practical point was that, on the one hand, the peritoneal cavity was over-distended with a benign nutrient fluid which hampered the circulation and respiration by its bulk, and on the other, the system was starved of nutrient and fluid, the want of which resulted in wasting and toxæmia. Though it had scarcely been mentioned, one of the most striking features of ascites was the tendency to anuria accentuated at each paracentesis. The problem that presented itself was the transference of the ascitic fluid to the general circulation, and for the patient the avoidance of the detention and loss of activity inseparable from the old method of repeated tapping. He had secured this in some cases by getting a surgeon to open up the femoral ring and so drain from the lowest available point of the abdomen into the upper region of the thigh. The greatest difficulty resulted from the tendency of the peritoneum to close any breach in its continuity. In one recent instance where the patient was kept lying up for three weeks by a leakage at the femoral incision a pouch formed as large as the two fists limiting the extension of the serum to this region by the development of an endothelial lining. It was not, however, essential to maintain perpetual drainage, it being sufficient to establish it for a few weeks so that by relief of tension in the abdominal walls the normal collateral circulation could expand. In the Talma-Morison operation this was effected by the continuous drainage into the dressings after the evacuation of the cavity, for it could hardly be contended that the small addition to the collateral circulation afforded by the epiplopexy can be of any serious importance. One of the principal channels concerned in the re-establishment of the circulation was the vena azygos major, whose radicles below the diaphragm were often as large as the forefinger in such cases. It was a matter of disappointment in the majority of instances that the drinking habit continued; both those recently shown at the Clinical Society after three and four years' freedom from ascites were still steady tipplers, and another case had returned to hospital only a fortnight after her discharge the worse for liquor. The more promising would certainly be the scarce non-alcoholic cases of cirrhosis and those of chronic peritonitis.

Mr. SINCLAIR WHITE (Sheffield) wrote stating that he had operated on 19 patients and had had five deaths directly due to the operation; three from anuria with mild delirium passing on through coma to death at about the end of a week; one from septic peritonitis on the eleventh day, consequent on bursting open of the abdominal wound during a fit of coughing; and one from exhaustion on the fourth day, in which there was free venous oozing from the omentum. Of the cases which recovered from the operation, four were not appreciably benefited. In three cases the ascites did not completely disappear, but some improvement in health occurred; all three, however, died within 12 months from the date of operation. In the remaining seven cases the ascites gradually disappeared, in two of them not until subsequent tapping had been done, and a more or less complete return to good health ensued. Unfortunately, in two instances a relapse to intemperate habits, in one patient after an interval of nearly two years, ruined what promised to be permanent recoveries. One patient is in robust health after aninterval of nine years; a second was, a few months ago, reported to be quite well after an interval of nearly six years. A third died from carcinoma of the colon two years after operation without recurrence of the ascites. The two remaining cases had been operated on during the last 12 months, and both promised well. Operative measures should be restricted to: (*a*) securing adhesions between the anterior surface of the great omentum and the posterior

[1] Handley: Hunterian Lectures on the Surgery of the Lymphatic System, THE LANCET, April 9th (p. 977) and 16th (p. 1062), 1910.

surface of the right rectus muscle. He made a 6-inch vertical incision 2 inches to the right of the linea alba, reflected the peritoneum and posterior layer of the rectus sheath outwards and inwards, implanted the omentum into the pocket thus formed, and secured it by a few interrupted sutures, taking great care not to puncture the omental vessels. (*b*) Peritoneal drainage through a suprapubic opening for from six to ten days. A progressive increase in the amount of urine excreted from the third day onwards nearly always took place in patients who did well. From a surgical point of view cases of cirrhotic ascites might be conveniently divided into two classes. In one of these, owing to a well-developed anastomosis between the portal and systemic veins, ascites appeared only as a terminal symptom, and not until the liver cells were hopelessly damaged and there was present accompanying degeneration of the vascular and possibly renal systems. Patients of that class were rarely difficult to diagnose. The congested skin with spider-webbed angiomata of the face, often an icteric hue in the conjunctivæ, great loss of strength, rapid wasting of the upper half of the body, acute progress of the ascites with œdema of the legs and genitals, and pronounced dyspnœa and tachycardia on slight exertion were the sure harbingers of death which no operation could avert. In the other class the collateral circulation was imperfectly developed, and ascites of gradual onset appeared as a comparatively early symptom before the hepatic cells had undergone serious degeneration. In many of those it would appear that the incidence of the poison (alcohol or other) extended to, and was most marked on, the peritoneal covering of the liver, hence an extensive and pronounced perihepatitis was commonly found associated with a greater or lesser amount of interstitial fibrosis. The patients were usually under the age of 50 years, might have quite healthy vascular and renal organs, and, apart from the abdominal distension, might be in fairly good health. Those were the cases which derived great benefit from epiplopexy, and, generally speaking, it should be restricted to them. There were, of course, borderland cases where the expediency of operating would give rise to anxious consideration. When in doubt one or more tappings would often help them to arrive at a decision. Indeed, in all cases a preliminary paracentesis was of value.

Mr. W. G. SPENCER said that if he differed from Dr. Hale White it would be because he had had no experience of the acute form of ascites rapidly running on to death. Dr. Hale White had drawn a distinction between ascites and ascites due to alcoholic cirrhosis. His remarks might apply with limitations. But there was the practical point against the latter part of Dr. White's statement and that was the great advantage of an exploration of the abdomen for the cases of ascites which had been repeatedly tapped. Following upon the appearance of Mr. Morison's first paper, physicians—Dr. de Havilland Hall, Dr. Murrell, Sir William Allchin, and others—had sent him cases, in some of which the great value of the operation had turned upon the exploration of the abdomen. Others had been definitely cases which came under the heading of those described by Mr. Morison. Mr. Spencer mentioned several cases in which exploration had been important. One, under Dr. de Havilland Hall, was tapped ten times and after each tapping carefully examined, but nothing was found until the abdomen was explored, and then it was discovered that she had two small papilliferous ovaries, which were removed, and the patient was shown some time afterwards, the condition having been cured, at the Medical Society. She was a housewife, looking after a family of ten children, and she continued well. The second was in a young man who was tapped, and no explanation could be given until the abdomen was explored, and then a contracted adherent appendix was found. When that was removed the lad got well and remained so. Mr. Lockwood said that that was an exceptional case; no doubt it was, but it was worth mentioning. A third patient was tapped several times and later drained. It turned out on exploration that the cause of her ascites was pelvic peritonitis traceable to a puerperal condition, and she was cured by fixing the omentum after Mr. Morison's fashion. He showed her at the Medical Society some time afterwards, and she had remained well, the date of exhibition being 1903. There was another case, an obscure abdominal condition, under the care of Sir William Allchin. The patient was invalided as a hopeless case. On exploration it turned out that his ascites must have been due to chronic inflammation of the duodenum with peritoneal inflammation around. He was cured after the omentum had been fixed to the abdominal wall. He developed veins, though they were not so marked as in the photograph Mr. Morison showed. He was taken back by his firm after an illness of eight years. Mr. Spencer had fixed the omentum in atrophic cirrhosis of the liver, and the cases had been relieved from further tappings, but they had remained in bed without general improvement, and had died. One woman had a liver half the normal size and lived only five weeks. He had not lost one of those cases from the operation. Of the hypertrophic cirrhosis of liver cases he would not say they were cured, but they remained a long time without return of the fluid. Perhaps they did not all accord with Dr. Hale White's connexion of ascites with cirrhosis, but there was one alcoholic patient who had been tapped many times. She was a typical besotted old woman who said she drank as much as she could get, and probably she did. She was shown at the Clinical Society four years after fixation of the omentum without any reaccumulation of fluid. She afterwards developed most rapid carcinoma of the breast, which was removed. It recurred six months afterwards, and she died. At the post-mortem examination an anastomosis was seen such as Mr. Morison described, but there was no fluid. Her statement regarding the four years was that she continued to drink as much as she could get, though perhaps that was not very much. One case, under the care of Dr. Hall, was well for five years, then he returned and was tapped; this was followed by heart changes and he died. Another case was one which Dr. Murrell called a variety of Banti's disease. It was that of a girl aged 25, who had inflammation of the lungs, followed by ascites and repeated tappings, and she had enlargement of the liver and spleen. After the operation she was relieved for one and a half years, and went back to her work. Then she relapsed and after further tappings died. The patient showed anastomosis. He could mention two other cases which were moderately unfavourable. In both the patients wished for something done instead of being continually tapped. A case under Dr. Hall and Dr. Roger Smith, of ascites with hypertrophy of the liver and cirrhosis, was that of a patient who had been seen by two consulting physicians, one of whom gave her three months to live and the other six months. The patient was weary of the tappings and she urgently wished operation. The first operation, done in 1909, was by Mr. Morison's method. That relieved her for nine months. When the ascites recurred and tapping became again necessary she wished a second operation. So he adopted Dr. Wynter's method of putting tubes, one in each femoral canal, and they conducted the fluid into her legs, which had to be kept raised. Later those tubes became blocked with fibrin and the fluid re-collected in the abdomen. She then decided upon a third operation, and as there was a moveable kidney it occurred to him to decapsulate the moveable kidney and dissect off a neighbouring piece of peritoneum. That operation again relieved her from the need for continual tapping. Later, at a fourth operation, he adopted Mr. Sampson Handley's method, taking double strands of long silk, putting them from the pelvis through the abdominal wall up to the breast, axilla, and kidney. That had not cured the patient, but tapping was required less often. The other day she was tapped for the thirty-fifth time, and her liver then reached down to the umbilicus. He did not know the cause of the ascites. In another woman he varied the operations. She had been improved for a time by the Drummond-Morison method, and thought so much of it that she wanted something more done. At the second procedure he did what was first proposed by Mr. Turner, of St. George's Hospital—namely, scraping the liver very hard. That relieved the patient for a time. Dr. Peter Paterson, of Glasgow, had invented a method of putting glass buttons in the abdominal wall, and Mr. Spencer, at a third operation, relieved this patient for a time by inserting a button. A case under Dr. W. G. Stone had ascites complicated by diabetes. He died five weeks after epiplopexy in diabetic coma. Both the diabetes and ascites were due to the formation of pancreatic calculi. Dr. Stone injected the omental vessels and found that a good anastomosis with the abdominal wall had already occurred. Mr. Spencer had never seen any harm come from these operations, and he was sure the patients' lives were prolonged. It

was a procedure which surgeons should urge, for it incidentally brought about an exploration of the abdomen.

Mr. G. H. MAKINS and Dr. F. PARKES WEBER also joined in the discussion, which was concluded by a brief reply from Mr. MORISON.

CLINICAL SECTION.

Exhibition of Cases.—Relative Value of Immediate and Delayed Laparotomy in Pneumococcal Peritonitis.

A MEETING of this section was held on Jan. 12th, Sir WILLIAM OSLER being in the chair.

Mr. PHILIP TURNER showed a case of Primary Chancres of the Lip in a male patient who was admitted to Guy's Hospital for an ulcerated swelling of the lower lip, which was first noticed eight weeks ago. The swelling, which was at first soft, rapidly increased in size, and in four weeks the skin broke and it commenced to discharge. About this time a second swelling appeared on the free margin of the lip. For two weeks the patient had complained of a sore throat. There had never at any time been any sore on the penis. When seen on Jan. 1st there was a round, raised swelling on the chin just to the left of the mid-line. In the centre of that was a circular ulcer about 1 in inch diameter, the base of which was composed of unhealthy-looking granulation tissue discharging thin pus. A second small indurated area, with slight ulceration, was present on the mucous surface of the lip at its junction with the skin. The submental, submaxillary, and cervical glands were enlarged but not tender, and the axillary glands were also palpable. There were ill-defined patches of a dull red erythematous rash on the chest and abdomen. Superficial ulcers with grey bases were present on both tonsils.

Dr. HERBERT FRENCH showed a case of Tumour below the Right Hypochondrium, ? Riedel's lobe. The patient, aged 34, was a married woman who had had six children, the youngest of whom was now 2 years old. She came to the hospital complaining of indeterminate symptoms, of which the chief were a feeling of being less strong than she was, a deficiency in her usual appetite, with a tendency to be sick in the morning. There were no symptoms directly referable to the abdominal tumour, which was only found as the result of ordinary routine examination. The woman had defective teeth, which probably accounted for her vague stomach symptoms; she looked strong and well. There was more than the usual degree of abdominal pigmentation, but that, she said, had been present for years. The patient had long had a tendency to constipation, but that had shown no increase of late. Extending down from beneath the right costal margin for a distance of 3½ inches there was a firm, painless, smooth tumour, more or less the shape and size of a goose's egg; it was external to the right mid-clavicular line and abutted upon the right flank, but did not extend backwards so as to fill up the loin. It could be grasped easily bimanually or by one hand when the fingers were behind and the thumb in front. It moved up and down with respiration, was dull to percussion, and the dulness over it was continuous with the hepatic dulness. There was no general enlargement of the liver. The lump seemed to be too much to the right to be a gall-bladder; it did not fill up the loin as a renal tumour or a suprarenal tumour would, besides which the urine contained no albumin, sugar, pus, or blood. The mass was smooth and permanent, and did not suggest from the feel of it that it was due to fæcal accumulation in the bowel or to a carcinoma of the hepatic flexure, and although the diagnosis was open to question the case was brought before the section as an example of a well-defined Riedel's lobe of the liver. There being no symptoms referable to the tumour, it seemed to require no treatment.

Dr. F. PARKES WEBER showed a case of Recurrent Aphasia with High Blood Pressure. The patient, aged 51, was admitted into the German Hospital on March 8th, 1910, having had eight attacks of slight temporary aphasia during the last seven weeks before his admission. Each of these attacks was accompanied by slight hemiparesis; in seven of them the paresis was on the right side, but in one of them on the left side. For six or seven weeks he had had headache, but there had been no vomiting or loss of consciousness. The patient was a well-nourished, intelligent man. He had slight optic neuritis, best marked in the right eye. The plantar reflex was of the extensor type (Babinski's phenomenon) in both feet, best marked in the left. The knee-jerks were active on both sides. The brachial systolic blood-pressure was 160 mm. Hg, and the radial arteries felt somewhat thickened. The urine was free from albumin and sugar, but a few tube-casts were detected by the centrifuge method. Nothing else abnormal was discovered. There was no history of syphilis. He was treated by iodide of potassium and had no further cerebral attacks. On April 10th, 1910, when he left the hospital, he said that all he had to complain of was slight headache in the morning. There had been no fever whilst he was under observation. The pulse had varied from 74 to 88 per minute. The daily quantity of his urine had averaged about 2500 c.c. He had increased somewhat in body weight. His brachial systolic blood pressure was 145 mm. Hg. Later on (in June, 1910) it was 150 mm. Hg. When seen again recently (Dec. 20th, 1911) the patient said he had had no further cerebral attacks and had not taken any medicine for a year. His only complaint was that attempting to work brought on a headache at the top of his head. Nothing abnormal could be discovered in his heart, lungs, or abdominal organs. His brachial systolic blood pressure was 140 mm. Hg. There was no paresis anywhere. The pupils were of medium size and reacted to light. Nothing abnormal could be discovered by ophthalmoscopic examination. The plantar reflexes were of the normal (flexor) type.

Dr. WEBER also showed a case of Chronic Splenomegaly of uncertain origin, with persistent leucopenia. The patient was a married Jewish woman, aged 23. Her spleen reached a good hand's breadth below the left ribs, but did not feel hard. Otherwise the patient appeared well, though rather pale. The history was that, after a confinement in August, 1910, she suffered from pains in the loins, headache, and giddiness. She had previously had no special illness; never malaria or jaundice. On admission to the German Hospital (Oct. 6th, 1910) she was found to have decided enlargement of the spleen, but beyond some abnormality in the blood nothing else abnormal was discovered. The red cells were 4,850,000 and the white cells only 2575 to the cubic millimetre of blood; the hæmoglobin was 80 per cent. On Oct. 30th, 1910, whilst under arsenical treatment, the patient was suddenly attacked with severe abdominal pain and vomiting, and, as there was likewise free fluid in the peritoneal cavity (shown by moveable dulness), the abdomen was opened by Dr. E. Michels. Nothing abnormal, however, was detected, excepting the presence of some ascites and enlargement of the spleen and liver; the capsule of the spleen was adherent to the surrounding parts; the peritoneum appeared extremely vascular. The patient recovered well from the operation and from the ascites, and left the hospital on Nov. 19th, 1910. Whilst in the hospital occasional moderate fever was observed. Wassermann's sero-reaction for syphilis gave a negative result, and von Pirquet's cuti-reaction for tuberculosis was likewise negative. A blood examination on Oct. 24th, 1910, gave: Red cells, 4,222,200 per c.mm.; white cells only 1200; hæmoglobin, 92 per cent. Differential count of white cells: polymorphonuclear neutrophiles, 27·4 per cent.; small lymphocytes, 44 per cent.; large lymphocytes, 11·3 per cent.; eosinophiles, 9·3 per cent.; transitionals, 7·3 per cent.; myelocytes, 0·7 per cent. Two nucleated red cells were seen. The white blood cells numbered 2680 on Nov. 19th, 1910, and 2650 on Jan. 2nd, 1911. A blood count in July, 1911 (when the patient was pregnant) gave: red cells, 4,660,000, and white cells 3500 in the cubic millimetre of blood. At this time the patient's disease might perhaps have been termed one of "anæmia splenica sine anæmia." In October, 1911, she lost much blood at her confinement. The most recent blood count gave the following figures: red cells, 3,922,000; white cells, 1975 per cubic millimetre of blood; hæmoglobin, 65 per cent. Differential count of white cells: polymorphonuclear neutrophiles, 68·3 per cent.; small lymphocytes, 14·7 per cent.; large lymphocytes, 4·6 per cent.; eosinophiles, 5·7 per cent.; transitionals, 6·7 per cent. Two normoblasts were seen during the count of 300 white cells.

Dr. WILFRED HARRIS showed two cases of Alcohol Injection of the Gasserian Ganglion for Trigeminal Neuralgia.[1]

Dr. H. E. SYMES-THOMPSON showed a case of Pulmonary Stenosis in a woman, aged 34, married, who enjoyed good health on the whole, and had had five children, including

[1] Dr. Harris's paper will be published in full in THE LANCET.

twins. She had noticed undue shortness of breath on exertion as long as she could remember and she complained of a certain amount of dyspepsia and constipation from time to time. Over the base of the heart there were a loud systolic murmur and a systolic thrill, which were most marked over the pulmonary area. The cardiac dulness was normal. There was no clubbing of the fingers, cyanosis, or anæmia, and no history of rheumatic fever, scarlet fever, or diphtheria.

Mr. C. H. FAGGE showed a case of Epithelioma of the Tongue; operation; subcutaneous recurrences on back five years later. The patient, aged 54, noticed a sore area on the dorsum of the right half of the tongue in 1892. During subsequent years it disappeared and recurred several times. Until 1897 he smoked about 4 oz. of tobacco in a pipe weekly; after that he reduced the amount. For two months before admission the tongue was ulcerated. In November, 1905, he sought admission into Guy's Hospital for indurated, raised ulcer, 1 inch in diameter, on the right half of the tongue; the left half of the dorsum showed chronic superficial glossitis; there were no palpably enlarged submaxillary or cervical lymph glands. The right half of the tongue with the submaxillary, salivary, and lymphatic glands were removed, and the patient was not seen again until December, 1911, when he complained of two hard, fixed masses on his back—one over the lower left ribs near the spine, and the other, the larger, on the right side; part of the latter was excised under local anæsthesia. Microscopically the lingual ulcer showed a typical squamous epithelioma; the lymph glands showed no secondary deposits. There was some difference of opinion as to the nature of the subcutaneous mass, and Mr. J. H. Targett had given Mr. Fagge his opinion that it was a secondary epitheliomatous deposit undergoing necrosis.

Mr. CYRIL A. R. NITCH showed a case of Supernumerary Mamma in a male aged 40, which was first noticed by the patient ten years ago. The breast was situated on the posterior fold of the axilla and the postero-internal surface of the upper arm on the right side. It was well formed and possessed a well-shaped nipple. The organ did not secrete any fluid.

Dr. H. C. CAMERON read a paper on the Relative Value of Immediate and Delayed Laparotomy in Pneumococcal Peritonitis. He said he had collected the cases of pneumococcal peritonitis admitted into Guy's Hospital during the last few years in order to attempt to estimate the effect of immediate laparotomy in that condition. He found that in many cases the diagnosis was correctly made. Pneumococcal peritonitis had characters which often distinguished it from peritonitis due to other causes. The age and sex of the cases collected were as follows:—

Females.		Males.	
No.	Age.	No.	Age.
1	27 years.	1	22 years.
1	20 ,,	1	18 ,,
2	15 ,,	1	16 ,,
1	14 ,,	1	10 ,,
1	11 ,,	1	4 ,,
1	9 ,,	1	3 ,,
4	8 ,,		
3	6 ,,		
2	5 ,,		
1	3 ,,		
1	2 ,,		
Average, 9·3 years.		Average, 11·7 years.	

With regard to other pneumococcal infections, in 13 cases it was possible to say with certainty that there were other pneumococcal infections present at the same time. Of these, 12 died. One case, which certainly had lobar pneumonia also, recovered. In 12 cases there was no certain evidence of the infection of any other part; of these, 6 recovered and 6 died. Since the peritonitis was always the result of a pneumococcal septicæmia, the aspect of the patient and the type of respiration were sometimes those familiar in lobar pneumonia. Herpes labialis might be present and the onset might be with rigors or shivering. A high leucocyte count might be found. In four cases which Dr. Cameron had examined during the last few months marked ulceration of the colon was present, and the symptoms of colitis had preceded the onset of peritonitis by several days or even weeks. For example, one case was that of a young woman admitted to Dr. Hale White's wards on Nov. 11th. For four days she had had intermittent colicky abdominal pain. On her way home from work the pain suddenly became worse, and she was brought to hospital. Dr. Cameron was called to see her at 10 P.M. The temperature was 104° F., and her abdomen was rigid over the appendix. The abdomen was opened and the cæcum was found to be thick and œdematous. Its peritoneal coat was inflamed, and there was a little clear fluid, which escaped on opening the peritoneum. The appendix was healthy. In 30 hours the patient died, and within that space of time lymph had been poured out in such quantity that, at the necropsy, many pints were collected. The cæcum and ascending colon showed extensive follicular ulceration. The walls were œdematous and the lymphatic glands swollen and congested. In that case the operation took place within a few hours of the spread of infection to the peritoneum, and they were able to time the rate at which effusion of lymph took place. In several of the cases it was noted that early in the disease it was possible to detect the presence of fluid in the peritoneal cavity, and the presence of a massive effusion might be taken as characteristic of that form of peritonitis. In that case, too, the high temperature, 104° F., at the onset of peritonitis was to be noted. In one of the four cases with ulceration of the bowel the gut had actually perforated, and Dr. French, who did the post-mortem examination, was of opinion that that had occurred during life. Dr. Cameron could find no other record of such an accident. From a consideration of those points—the age and sex, the onset with rigors or herpes labialis, the evidence of preceding colitis, the simultaneous pleurisy, pericarditis, or pneumonia, the great and rapid exudation of fluid into the peritoneal cavity, the high temperature at the onset—it was often possible to make a diagnosis with some certainty. There remained the question to which he specially wished to draw attention—the advisability of submitting those cases to laparotomy at the onset of the symptoms. The peritonitis was always the result of pneumococcal septicæmia. The septicæmic process, if it did not end in death, would appear to run a course usually of some two or three weeks. When recovery did take place, one or more residual collections of pus were found; just as an empyema might complicate the convalescence of pneumococcal septicæmia with the more usual localisation in the lung. He had notes of four cases admitted to Guy's Hospital with such residual abscesses after recovery from the acute illness. One was in a woman, aged 27, who made a complete recovery on evacuation of the pus. Another was a boy, aged 10, who was admitted a month after the acute illness and who was discharged to a convalescent home with a diagnosis of tuberculous peritonitis. A year later he was readmitted in an emaciated condition with an abscess which had burst at the umbilicus, the pus from which was found to contain only pneumococci. Under vaccine treatment he made a good recovery. All four cases recovered without any complication. Such cases must suggest the possibility that recovery might take place without any operation at all. No proof could be given, but he offered the following as such a case of recovery without operation. He saw the child many times when it was under Dr. French's care. It was that of a girl, aged 15, who was admitted with vomiting and abdominal pain of two days' duration. The abdomen was swollen, rigid, and tender. In both flanks there was dulness, which shifted on rolling the child over. There was herpes labialis. The temperature was high, between 102° and 104° F., and the pulse was rapid. There was a leucocytosis of 15,600. The abdominal pain and vomiting ceased after four days, and the child made a good recovery. Dr. French diagnosed pneumococcal peritonitis. Cultivation from the herpetic vesicles gave a growth of staphylococcus albus. Such recovery, either with or without residual abscess, must be regarded as a rare and fortunate chance. If immediate laparotomy could claim to save even a small percentage of cases, there could be little doubt that it should always be advised. Dr. Cameron found that eight cases admitted in the acute stage were not operated upon before death. In seven of those pleurisy, pneumonia, pericarditis or endocarditis was present, as well as peritonitis. The eighth case died as soon as admitted. Twelve cases were submitted to immediate laparotomy. Nine of those died: four on the day following operation, the remainder

within a few days. Three cases recovered, but in all three the laparotomy performed at the onset of symptoms failed to produce immediate improvement. The patients passed through a long and critical illness, developed on convalescence the signs of abdominal abscess, and recovered after the evacuation of the pus. No case recovered without the formation of residual abscesses and without a second operation being required. It would appear that those cases of pneumococcal peritonitis which recovered were those which passed successfully through the pneumococcal septicæmia. After the termination of the acute septicæmia only a minority of cases died as a result of the failure to secure drainage of the residual collections of pus. That was, however, the cause of death in the case of a little girl, aged 11, who was admitted on Oct. 10th, 1911, with pneumococcal peritonitis, so ill that operation was delayed. She was almost comatose, with incontinence of urine and fæces. She improved greatly for three weeks, when a left subdiaphragmatic abscess was opened. Three further operations had to be performed to drain abscesses. After the last of those, unfortunately, a fæcal fistula formed, and the child gradually sank and died on Dec. 20th. For many weeks it seemed likely that she would recover. That she would have died at once if operated on on the day of admission was, he thought, certain. That was the only case he could find in which the policy of waiting was purposely adopted, but he thought that it was likely that in certain cases it was the right course to pursue. He could find no evidence that establishing drainage by laparotomy, at the onset of the disease, increased the chance of recovery from the septicæmia, or helped to cut short the process in the peritoneal cavity. On the other hand, he thought that there were cases so ill at the onset of the disease that laparotomy might turn the scale against recovery, and he suggested that in those cases it might be wiser to wait until the septicæmia was at an end, and until the disease had become local to the peritoneum, just as was done in dealing with the empyema which followed upon pneumonia. At the same time, he was fully conscious of the complexity of the problem and of the small help which statistics such as his could give in deciding the wisest course of action in any individual case.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

The Epidemic Grant and School Attendance.

A MEETING of this society was held on Jan. 12th, Professor A. BOSTOCK HILL, the President, occupying the chair.

Dr. WILLIAM BUTLER, in a paper on the Epidemic Grant and School Attendance, said that the withdrawal in 1903 of Article 101* of the Code of the Board of Education at once created difficulties for medical officers of health. The immediate consequence was that the education authorities were deprived of the special grant (which the Board was empowered to make in compensation for loss of actual grant) which would otherwise have been earned if the average attendance had been seriously diminished by what in effect was the advice of the medical officer of health in his attempts to control disease. The conflicting interests thus created had not yet been resolved, in spite of the efforts of the education authorities, who had suffered in purse, and the health officers, who had suffered in popularity. While the epidemic grant articles of the Code were in operation there was no organisation to meet the requirements of medical and health interests which those articles safeguarded. The medical officer of health was not an officer of the education authority, and with few exceptions no arrangement was in force whereby he could keep himself in touch with non-notifiable disease. His only information of the prevalence of, say, measles or whooping-cough was when he officially received the death returns. The epidemic grant was in effect an arrangement enabling the schools to earn their annual grant without diminution from loss of attendance due to the prevalence of infectious disease. Such a result was entirely unjustifiable. Designed as a measure for safeguarding preventive action, Article 101* worked in practice as an instrument of fatalistic non-interference. Not the steps to prevent the spread of disease but its actual prevalence was rewarded under the wrong-headed administration which made an epidemic of measles the ground for earning a grant. After referring to the withdrawal of the epidemic grant in 1903, Dr. Butler suggested that there should be instituted a health grant which should comprehend not merely the claims arising out of the procedure for dealing with epidemics but of all other considerations bearing upon the health of the children attending public elementary schools. A proportion of such a grant sufficient at least to cover the maximum loss due to interference with school attendance arising out of health considerations should be apportioned for this purpose, and should be paid only where the arrangements made for dealing with communicable diseases met with the approval of the Board of Education.

Mr. J. TUBB-THOMAS related his experience of the old epidemic grant and spoke of the many difficulties associated with it.

Dr. SIDNEY DAVIES deprecated the action of school attendance officers and of teachers in urging children to attend school when not in a fit state of health. He considered there was not the need for attendance officers which prevailed in former years.

Dr. W. J. HOWARTH considered that the ordinary grant should be based on general grounds and should not depend on individual attendances.

Dr. A. H. BYGOTT deprecated the giving of prizes for regular attendances. As a result many children went to school when they should remain at home. He spoke approvingly of the appointment of women attendance officers.

Dr. J. M. CLEMENTS and Dr. W. A. BOND regretted the withdrawal of the epidemic grant.

Dr. R. DUDFIELD had found the grant extremely useful, though it suffered from the fault that it paid for sickness rather than for health. He thought it a pity the medical officers of health in London were not more in touch with school work.

Dr. H. FRANKLIN PARSONS pointed out that when the epidemic grant was withdrawn it was thought the money saved could be more usefully spent in other directions. He remarked that with the advent of systematic medical inspection there was not the same difficulty as formerly in ascertaining whether a child was really ill or not.

Dr. P. CALDWELL SMITH considered that the grant in its day did good, but thought there would be little need for any grant at all if children were not admitted to school under six years of age.

Dr. JAMES KERR said that the epidemic grant was intended to be an insurance against infectious disease, and as such it acted very well. It had the effect of preventing children being improperly crowded into the schools by teachers and attendance officers.

Mr. E. H. T. NASH felt sure there was no likelihood of the epidemic grant being introduced, and hoped that Dr. Butler's proposal would be pressed forward.

Dr. GERARD C. TAYLOR was of opinion that already there was ample power to exclude children from school attendance for such periods as the medical officer of health thought fit.

The PRESIDENT pointed out that the introduction of medical inspection had complicated the position. He spoke with approval of the institution of a general health grant for large towns, but feared it would not be applicable to rural areas.

LIVERPOOL MEDICAL INSTITUTION.

Rational Treatment of Chronic Suppurative Otitis Media.—Diagnosis and Treatment of Gastro-duodenal Ulceration.

A MEETING of this society was held on Jan. 11th, Dr. T. R. BRADSHAW, the President, being in the chair.

Mr. C. A. ADAIR DIGHTON read a note on the Rational Treatment of Chronic Suppurative Otitis Media. This he considered to be the immediate treatment by means of Heath's conservative mastoid procedure in every case uncomplicated by labyrinthine suppuration when first seen. Mr. Dighton reviewed the tremendous advantages of this operation in regard to the restoration of hearing, and contrasted it with other recognised methods of treatment. All of these he considered unsatisfactory, and further was of opinion that the radical operation was unjustifiable except in cases

of labyrinthine suppuration. He considered that by Heath's method the hearing was restored in 75 per cent. of cases, and reported instances in support of this. In one case the patient from inability to hear a watch on contact had improved after the operation so much that he could hear it at 17 inches, which was the normal for that watch.—Mr. THOMAS GUTHRIE said that the so-called Heath's operation was in principle identical with that introduced by Kuster in 1879 and abandoned both by himself and other otologists as a routine operation for chronic disease. Its proved inadequacy for a majority of chronic cases in which the tympanic structures were seriously diseased led to the evolution of the radical operation. For suitable cases, however, the operation was a good one, but these cases were a small minority. Mr. Dighton advised resort to the partial mastoid operation in all cases of chronic suppurative disease, yet it was a matter of common knowledge that in large numbers of these cases healing took place after such measures as removal of adenoids and various forms of intrameatal treatment.—Mr. E. MALCOLM STOCKDALE regretted that Mr. Dighton had dealt with the subject from such a narrow point of view, and emphasised the importance of distinguishing sharply between acute and chronic cases. He agreed with Mr. Guthrie as to the importance of removing adenoids if present. Concerning mastoid disease, the anatomical structure of the mastoid portion of the temporal bone was of the greatest importance. When the antrum communicated freely with air or marrow cells mastoiditis ensued early, and required a post-aural operation. In these cases Mr. Stockdale performed the conservative mastoid operation. When the mastoid antrum had a firm, bony wall, and was small, a post-aural operation was only likely to become necessary in neglected cases, and here the radical or complete post-aural operation was called for. Speaking from a long experience of this operation in this class of case, Mr. Stockdale had usually found the tympanum damaged beyond the hope of useful repair, the malleus, incus, or both, being frequently missing, the incus usually being shed before the malleus. The Eustachian tube should receive attention. In the few exceptional cases of chronic suppurative middle-ear disease where spontaneous arrest of the discharge took place, the ear was commonly rendered very deaf. He could not accept the statement that the operation damaged the hearing in these cases, as by careful observation he had usually found that it resulted in a considerable improvement.—Mr. HUGH E. JONES congratulated Mr. Dighton on his results, but remarked on several fallacies which occurred in his note—e.g., the assumption that the antrum was always diseased in suppurative otitis media; the antrum might be the reservoir for pus or its lining membrane might be inflamed in the early cases, but in the genuinely chronic cases the real bone disease was generally in the tympanum. The statement that the radical mastoid operation destroyed the hearing was not in accord with facts; the resulting state of the hearing whatever operation was performed depended upon the condition of the essential organs before operation. He had done from one to two hundred modified operations in selected cases, but he found that in many of them further and more radical operations had to be performed afterwards.—In reply, Mr. DIGHTON pointed out that Heath's operation was not the same as Kuster's.

Mr. KEITH W. MONSARRAT read a paper on the Diagnosis and Treatment of Gastro-duodenal Ulceration, with an analysis of 50 consecutive cases of simple affections of the stomach submitted to operation. The series included 18 cases of gastric ulcer not at the pylorus, 11 cases of duodenal ulcer, 15 cases of pyloric and duodenal stenosis, and 4 cases of gastric dilatation without stenosis. He tabulated the nature and result of the operation and discussed the differential diagnosis.—Mr. F. T. PAUL was not in favour of excising ulcers of the stomach and did not consider the results of gastro-enterostomy very satisfactory for ulcers far removed from the pyloric region apart from hour-glass contractures. On the other hand, pyloric and duodenal ulcers and stenosis were most satisfactorily treated by gastro-enterostomy. He had very slight experience of any ulterior undesirable conditions except such as were directly due to inexcusable faults on the part of the patient. Mr. Paul laid stress upon the desirability of closing the pylorus by a silk purse string suture in cases of duodenal ulcer, and it was of especial importance to do this in cases of perforation. He recommended gastro-enterostomy to be done whenever possible in such cases.—Mr. G. P. NEWBOLT considered that the diagnosis between gall-stones and gastro-duodenal ulcer was often most difficult. He had met with a combination of the two diseases. He quoted a case of posterior gastro-enterostomy which was performed for duodenal stenosis and in which the patient died 18 months later from hæmorrhage due to ulceration around the gastro-enterostomy. He believed that a good number of people died directly from hæmorrhage from gastric and duodenal ulcers, although they were led to believe that this was rarely the case. He performed the posterior "no loop" operation, but was not in favour of performing this operation when closing a perforated duodenal ulcer, preferring to do it later if required.—Mr. ARTHUR J. EVANS emphasised the frequency and danger of duodenal ulcers. He had been called upon to operate no less than seven times within the last 12 months for the condition. He questioned the desirability of doing gastro-enterostomy at the time in addition to closure of the perforation and invagination of the ulcer. He had had five recoveries out of the seven in which simple closure had been done. There were both severe shock and peritonitis in these cases, and the addition of gastro-enterostomy under these circumstances would, he thought, add a great risk.—Dr. P. F. TINNE called attention to the great similarity between cases of Henoch's purpura and gastric ulcer with sudden symptoms of perforation. In both there were hæmatemesis, sudden violent abdominal pain, and to all appearances the classical symptoms of perforation. It was not till the following day that the purpuric spots about the joints made their appearance and settled the diagnosis.

EDINBURGH OBSTETRICAL SOCIETY.

Pyosalpinx.

A MEETING of this society was held on Jan. 10th, Dr. J. HAIG FERGUSON, the President, being in the chair.

The PRESIDENT read notes on a case of Pyosalpinx successfully removed by abdominal section during the puerperium. The patient was pregnant with her second child when she experienced pain in the left side during her fifth month of pregnancy. It increased in degree and became almost constant until labour set in. On the sixth day after labour there was severe pain in the left iliac fossa, though her temperature had been raised for three days. On vaginal examination the only abnormality to be detected was a soft, round, exquisitely tender swelling, about the size a small plum, in the left lateral fornix, moveable apart from the uterus. For some days the temperature continued raised and the swelling was observed to have become more diffuse with thickening and fixation of the surrounding parts. After waiting for the subsidence of the more acute symptoms, on the seventeenth day of the puerperium the President operated and found a left pyosalpinx with considerable adhesions in the neighbourhood. Owing to the escape of pus and the presence of a considerable oozing area, drainage by the vagina was decided on. The patient made a satisfactory recovery. The purulent contents of the tube were found to yield a mixture of streptococcus pyogenes and staphylococcus pyogenes aureus. Chronic inflammation was observed in sections of the tube. There was no history of gonorrhœa at any time. It was a point of interest that though the patient had suffered pain from the fifth month of pregnancy and the tube showed signs of chronic inflammation yet she showed no acute and severe symptoms until the fifth day after labour, and the probable explanation was given by the late Dr. R. Milne Murray when he ascribed it to some subtle change in the vital processes or tissue metabolism which follows the passage from the state of pregnancy to the state of the puerperium. In distinguishing a tubal condition from a cellulitis a guide was the height of the swelling in the broad ligament as determined by bimanual examination. The higher it was the more likely was it to be tubal or mainly tubal, though subsequent extension of inflammation might obscure this. If the swelling began in the base of the broad ligament and extended upwards and outwards, it was a cellulitis, probably the result of an infection from a cervical tear. The bruising during labour or twisting of a small ovarian cyst might be mistaken for a tubal condition. A blood examination did not give much assistance unless the leucocytosis rose very rapidly.

Dr. A. H. F. BARBOUR stated that only by abdomina section could one arrive at a certain diagnosis. If the

condition in this patient had continued from mid-term, how did symptoms develop in the puerperium? It was evident that a tubal condition must have begun before pregnancy. The other probability was a septic infection during the puerperium. As regards differential diagnosis he had seen many cases of cellulitis begin high up in the broad ligament and extend along the round ligament and also downwards. The bacteriological report pointed to a recent suppuration in the tube; if it had been an earlier infection he would have expected the pus to be sterile.

Dr. J. LAMOND LACKIE referred to a case which he had seen with Dr. Milne Murray, where the chief feature was the absence of physical signs, nothing being felt through the abdominal wall or in the fornices. As the patient was very ill the abdomen was opened, and an inflamed tube was found from which a very small amount of pus was squeezed out at the abdominal end, which was not closed. The patient's urgent symptoms were immediately relieved.

Dr. F. W. N. HAULTAIN said there should not be much hesitation in opening the abdomen during the puerperium. Some were apt to consider it dangerous. He had opened the abdomen several times during the puerperium, and all the patients had done well. The main feature in pyosalpinx in the puerperium was its mobility and high situation; if there was cellulitis in the broad ligament the mobility was not so great. He would not be inclined to wait so long as the President before operating.

Dr. JAMES RITCHIE raised the question whether in a case of tubal disease recognised during pregnancy it would not be better to operate during the pregnancy as the condition might become worse owing to injury during labour, and after labour there was much more risk of infection.

Dr. B. P. WATSON instanced a case of double pyosalpinx beginning after delivery. The patient was quite well until the tenth day, when her temperature was raised and pulse quickened. Her symptoms were fairly acute for a week, and two cystic swellings, tender and movable, were found in the lateral fornices. The infant developed ophthalmia, and gonococci were found in the discharge from the eyes. It was thought better not to operate in the acute stage. On waiting the patient improved so much that in one month she was perfectly well, all signs of swelling in the tubes having quite disappeared. She had been delivered of another child since then.

Dr. JAMES YOUNG reported a case of pyosalpinx developing one month after a two months' abortion. The patient was operated on four weeks after it began, and the pus in the tube was then found to be sterile.

Dr. N. T. BREWIS said the question was when to interfere. He had found cellulitis an exceedingly rare affection in the puerperium; the swellings were more frequently tubal. There would be no hesitation if one could be sure the condition was sterile. Some required interference, but the majority got well if they were left alone. The proper route for operation was in early cases by opening the abdomen, as the adhesions were not dense and were easily separated, and there was not much chance of infection from the escaping pus. In older cases the vaginal route should be chosen if the tube was fairly adherent, as the adhesions could be more easily separated and the operation more safely accomplished from below. The pus in cases of pyosalpinx became sterile after a time, but there could be a reinfection.

The PRESIDENT, in reply, stated that a swelling in the fornix high and movable was probably tubal. As to the question of operation during pregnancy, the difficulty was the diagnosis, and it was known that operations during pregnancy after the fourth month were apt to be followed by premature labour.

Dr. D. BERRY HART read a paper on Numan, the veterinarian and comparative anatomist of Utrecht, a forgotten observer on the freemartin. Numan's atlas and text were shown and the circumstances of the rediscovery of their existence explained.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A clinical meeting of this society was held on Jan. 5th, Mr. W. McAdam Eccles, the President, being in the chair.—The following cases were shown:—The President: 1. Gummatous Infiltration of the Thigh in a man with no specific history. The patient first noticed a small, hard lump in Scarpa's triangle on the right side; this gradually increased, apparently invading the sartorius sheath, and tracking down to the insertion of the muscle. X rays threw no shadow. On the shin of the right leg were two typical specific patches, and Wassermann's reaction had been positive twice. He was improving under mercury and iodide. 2. Transposition of Viscera in a man. This was a case of complete transposition, including the attachment of the mesentery. The patient had come for treatment for vomiting and hæmatemesis and had a posterior gastro-jejunostomy performed; during the operation it was possible to demonstrate the completeness of the transposition. It was interesting to note that the man was right handed.—Mr. W. E. Fry: A patient with Two Big Toes on one Foot, with skiagrams.—Dr. T. Grainger Stewart: 1. A case of Myotonia Atrophica in a male aged 39. The wasting involved the sterno-mastoids, biceps and triceps, forearm muscles, and slightly the small hand muscles; also the thigh muscles and muscles below the knee. The patient was unable to close his eyes tightly or to smile. 2. A case of Tremor of the Right Hand on sustained voluntary movement in a male aged 12. A history of headache and vomiting and presence of optic neuritis made clear the presence of intracranial pressure. Corroborative tests had not yet proved the lesion to be tubercular, the seat of the lesion probably being in the hypothalamic region on the left side. 3. A case of Bilateral Involuntary Movements in a male aged 9½. This case was a seven months child; he made no attempt to use his hands until the age of 3, and was unable to walk until the age of 7. He taught himself to write and to feed himself with his toes before he learnt to walk. Involuntary movements were first noticed at the age of 4; these had gradually increased; no fits. There were present athetoid movements of both arms and of facial muscles, much increased by any voluntary innervation—e.g., talking or attempting to move the arms; no spasticity; voluntary movement was almost absent in the arms. Sensation was unimpaired.—Dr. F. G. Crookshank (for Dr. J. M. Bernstein): A case of Cretinism with a goitrous mother. The interesting point in this case was that the child was born in Ealing, the mother in Bethesda in Wales, where endemic goitre was said to occur, and she had an enlarged thyroid. In the Swiss valleys the endemic cretins were born of goitrous parents.—Dr. Arthur Saunders: A case of Subcutaneous Rheumatic Nodules in a child aged 4. This case was shown at a previous meeting of the society, and was again brought up to show the changes in the nodules. Some had completely disappeared, whereas some had increased in size. Photographs taken when the child was shown some three months back and some taken recently showed well the changes mentioned.—Dr. Phineas S. Abraham (for Dr. H. J. Davis): A case of Sessile Papillomata of the Palate, and a case of Lupus of the Larynx.—Mr. Aslett Baldwin: A case of Fracture Dislocation of the Left Elbow treated by operation, and a case of Ruptured Left Tympanic Membrane and Facial Paralysis.—Mr. R. B. Etherington-Smith: A case of Gumma in the Left Biceps Muscle with Paralysis of Muscles of Left Shoulder Girdle.

UNITED SERVICES MEDICAL SOCIETY.—A meeting of this society was held at the Royal Army Medical College on Jan. 10th, Major E. B. Waggett, R.A.M.C. (T.), the President, being in the chair.—Lieutenant-Colonel C. H. Burtchaell, R.A.M.C., delivered a lecture illustrated by magic lantern slides on "The Medical Service with Lord Methuen's Force in the Advance on Kimberley in 1899, with Reference to the Modern Organisation of the Medical Service." Colonel Burtchaell first compared the organisation of field ambulances with that of the bearer companies and field hospitals they had replaced. He showed that the only essential differences were that the former were now divisional units, that the bearer and hospital *personnel* now formed part of one unit whico was divisible into three parts, and that while there was an increased number of stretchers and stretcher-bearers under the new arrangement the *personnel* available for dressing stations and so-called hospital purposes was practically the same as formerly in relation to the strength of troops, one tent subdivision of a field ambulance being almost identical with half of a field hospital. He then described in detail the work of the medical services at the four battles which occurred during the advance on Kimberley. Among many interesting points which came out the following were specially noteworthy. The principal medical officer was present at the staff reconnaisance before the battle of Belmont, and, thus made acquainted with the plan of action and the ground, he was able to select places for the dressing

stations, &c., and to forecast the arrangements for succour of the wounded much more effectively than if he had had to rely on second-hand information. At the Modder River the medical units were following close behind the troops when the enemy unexpectedly opened a heavy fire. This determined the position of the dressing stations which were located just out of range of the enemy's guns or in the nearest dead ground available. Ambulance wagons were unable to reach the regimental aid-posts where wounded were collected until after nightfall, when the enemy withdrew. At the battle of Magersfontein the field hospitals accompanying the troops were held in reserve during the first stage of the engagement, and did not open until late in the day, when they moved up to the sites of the dressing stations formed by the bearer companies. One field hospital—i.e., the equivalent of two tent sub-divisions of a field ambulance—remained at Modder River, four miles distant, and there received and entrained over 600 wounded for Orange River and Cape Town. At Orange River difficulties arose because there was no organisation like their present clearing hospital available at that place.—Surgeon-General Sir James Porter, K.C.B., R.N. (who was with the Naval Brigade under Lord Methuen's command), discussed various points mentioned in the lecture and spoke in high terms of the work which the Army Medical Service did during the operations which had been described.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 4th, Mr. T. H. Ionides being in the chair.—Mr. H. H. Taylor showed a man aged 35, who had complained of failing sight which he had noticed for a few weeks. On examination, vision in the right eye was 6/36, and in the left eye 6/6. The right disc was distinctly white, with clean-cut edges, and normal vessels. The left was pale, but not atrophied. Later a perimetric examination was made, and it was found that in the right eye there was a very restricted area of vision in the temporal field, and no central vision at all. In the left field there was temporal hemiopia. The pupils were so contracted that it was not possible to get Wernicke's sign. There was no tremor or ataxia, and the knee-jerks were normal. There was no sign of acromegaly, and an X ray photograph showed no enlargement of the sella turcica.—Dr. D. G. Hall read notes and showed photographs of a case of Henoch's Purpura in a boy aged 15. The illness began with pyrexia and general pains. The eruption appeared next day on the limbs and gastro-intestinal symptoms a day later. These consisted of hæmorrhage from the bowel, vomiting, and severe abdominal pains. A week later both eyes were occluded by a serous effusion which cleared off in a few days. Three weeks from the initial symptoms he developed a mitral systolic bruit and marked irregularity of pulse. At the same time blood and casts appeared in the urine. At the height of the attack he passed about a dozen stools with some blood in them each day, and from time to time there were various joints affected. Treatment was mainly dietetic and symptomatic, and after some months the boy left Brighton, having made an incomplete recovery.—Dr. L. A. Parry read notes of some cases of Urinary Calculi. He advocated the suprapubic operation in boys unless the operator had had very considerable experience of lithotrity. In women dilatation of the urethra and extraction of the stone was the ideal procedure, and was available for stones up to about 1½ inches in diameter. He referred to a case of a stone in the female bladder, which had formed round a hairpin used for the purpose of procuring abortion. The sharp ends of the pin, which were not covered by the stone, were seized with Spencer Wells forceps and the stone easily withdrawn. A case of stone in the urethra, which gave a negative result with an X ray photograph, but was detected by means of the cystoscope, and subsequently removed, was also recorded.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on Dec. 13th, 1911, Dr. A. W. Russell, the President, being in the chair.—Dr. William Ritchie read notes of a case of Stone in the Bladder, with early recurrence. The recurrence took place ten months after cystotomy had been performed. He thought this was due to the site of the calculus not having been sufficiently curetted after removal of the stone. After the first operation the repair of the fistula was not satisfactory; this he attributed to the fact that the fistula had been immediately closed, and that the accompanying cystitis had not been cured by prolonged drainage, as was done at the second operation.—Dr. Nigel Stark read a paper on Uterine Fibrosis and Allied Conditions, with Special Reference to Treatment. He pointed out the want of a standardised and universal nomenclature in gynæcology and the confusion that resulted. Many text-books made no mention of the term "fibrosis," but attributed all the symptoms now ascribed to it to chronic endometritis. By fibrosis was meant increase of fibrous tissue or replacement of muscular by fibrous tissue. It was always accompanied by increase in the size of the uterus. The enlargement might be slight, and on dilating the cervix hardly any mucosa came away on the curette. The clinical features were hæmorrhage, leucorrhœa, dysmenorrhœa, and pain. As regards treatment, removal of the ovaries was recommended by some, but hæmorrhage was not always arrested after this had been done. Hysterectomy had therefore come to be the operation of selection. He considered this too drastic, and advocated the excision of a wedge-shaped portion of the body of the uterus. This operation, "uteroplasty," he had performed on eight occasions.—Dr. G. Balfour Marshall preferred hysterectomy as hæmorrhage had recurred after uteroplasty.—Dr. A. C. McIlroy condemned the removal of the ovaries.—The President said he treated this condition by vaginal hysterectomy.—Dr. A. MacLennan showed a special Instrument for Closing the Utero-vesical Pouch in Ventro-fixation.—Fresh specimens were shown by Dr. McIlroy, Dr. D. Shannon, Dr. Balfour Marshall, the President, and Dr. Nigel Stark.

Reviews and Notices of Books.

Man and Beast in Eastern Ethiopia. By J. BLAND-SUTTON, F.R.C.S. Eng. London: Macmillan and Co., Limited. 1911. Pp. 419. Price 12*s* net.

THOSE of our readers whose minds can carry them back some 45 years will remember the interest and excitement with which the publication of Sir Samuel Baker's "Albert N'Yanza" was received, and the difficulties and hardships of his journey. Nowadays, however, Uganda and the Uganda Protectorate are so within the bounds of civilisation that they are available for what may be called holiday tours, and Mr. Bland-Sutton's book deals in part with such a tour. Roughly speaking, his travels extended over a district ranging between 5° north and 2° south of the equator, and from Mombasa as far as 30° east, although large portions of this area were naturally left untouched. Starting from Mombasa, he, in company with Dr. Comyns Berkeley, journeyed by the Uganda Railway to Port Florence on the north-western shore of the Victoria Nyanza. Thence they travelled about on the northern shore of the lake and returned by caravan through the Rift Valley, a portion of which is traversed by the railway. Mr. Bland-Sutton gives a vivid, if somewhat impressionistic, description of the various tribes with whom he came into contact, and of the fauna and flora, together with some remarks upon the geological features of the country. Written by one who, though a trained observer, with a wide range of scientific knowledge has done no special work in natural history, the book is of very great interest to non-technical readers, and this interest is enhanced by the admirable illustrations. Some of the observations upon the curious fashions in ear ornaments among the Kikiyu and neighbouring tribes have already appeared in our columns.

The portion of the book which appeals with most novelty is the description of the great Rift Valley, a mighty depression which Mr. Bland-Sutton considers is to be comparable only with the great cañon of the Colorado River in Arizona. The Rift Valley, however, unlike its American congener, exhibits various evidences of volcanic activity in the shape of hot springs, steam holes, and the like-

and the valley abounds in bird and animal life. Other chapters are devoted to an account of the various tribes, their dress, manners, and customs, and in addition the fauna and flora are described under the headings of lions, crocodiles, thorns, horns, antelopes, gazelles, beaks, crests, tails, wings, jiggers, ticks, mosquitoes, and flies and sleeping sickness. There is also a chapter upon ivory, which Mr. Bland-Sutton considers, and we think rightly, as "one of the greatest curses of Africa."

Although Mr. Bland-Sutton writes in no way as an explorer, there is a good deal of matter in his lively account of his travels which will be new even to those who have read many reports and books published by other writers and explorers; and those of our readers who will feel stimulated by Mr. Bland-Sutton's account to inquire further into the features of the country will owe him a debt of gratitude for the bibliography given at the end of each chapter, containing the names of works written by experts on the various subjects with which the chapters deal.

Dental Disease in its Relation to General Medicine. By J. F. COLYER, L.R.C.P. Lond., M.R.C.S. Eng., L.D.S. R.C.S. Eng. With the assistance of STANLEY COLYER, M.D. Lond., M.R.C.P. Lond., D.P.H. London: Longmans, Green, and Co. 1911. Pp. 189. Price 4*s.* 6*d.* net.

THIS interesting little book sets out in clear style the relationship that exists between dental and oral and general diseases. The information is badly needed. But scant study is given by the ordinary medical student during hospital work to the mouth and its contents, and afterwards he is inclined to consider their affections unworthy of his earnest consideration. He sedulously treats general systemic disease, but frequently fails to recognise the importance which attaches to oral hygiene. The authorities of the sanatoriums of this country cannot likewise be excluded from the same criticism. Patients are daily lying in the wards of our hospitals whose mouths are in the filthiest condition with obviously grave effects. This book draws earnest attention to the surgical requirements of the mouth and of the teeth, and being written by persons of acknowledged authority its publication should certainly do great good.

Of course, there is a danger lest things which have for years needed saying, when they come to be said, should be said too forcibly. In certain quarters during the last decade the oral cavity has been regarded as a veritable hot-bed of infection—a focus of disease eventually menacing the health and at times the life of its owner. We find this to be an extreme view, and therefore regret that two such experienced and close observers as the authors of this work—especially in the later of the pages before us and in those dealing with "Oral Sepsis and its Influence on the Body"—should appear to adopt it. The evidence adduced to prove that "oral sepsis" is the cause of neurasthenia, cardiac irregularity, "subacute combined degeneration of the spinal cord," infective endocarditis, and other things, is suggestive but not convincing, and perhaps the same might be said of its close association with pernicious anæmia. The authors have spared no pains to collect cases and to narrate the opinions of other writers, but they have not been able to draw convincing conclusions. The entire subject, which is of the utmost importance to the public as well as the medical man, cannot be dealt with within the compass of a small manual; and this has hampered the authors, who would no doubt have preferred to write at far greater length and with full justifying details. It is probably right to believe that gastritis and some of its sequelæ resulting from severe "oral sepsis" are due to the ingestion of pathogenic oral bacteria, but gastric ulceration, for example, cannot yet be definitely attributed to the same cause, and the same must be said of secondary pancreatitis and parotitis. Oral sepsis includes, say the authors, "all chronic inflammatory diseases about the mouth," and the reservation apparently made with regard to what is known as pyorrhœa alveolaris is clearly accidental, for the description given of the condition shows it also to be an oral sepsis. There is a good deal of ambiguity in connexion with the use of the freely-recurring term "periodontal disease," and it is difficult precisely to define its meaning.

It will be gathered that we think that the authors have claimed too much mischief as traceable to the neglected or diseased mouth, but none the less we can recommend their book warmly to the practitioner. It is becoming daily more evident that he should be particularly interested in dental (and oral) disease, whether engaged in the general practice of medicine or as a consultant following some special branch. The wholesale extraction of teeth as opposed to their proper preservation and the due observance of oral hygiene is a serious matter, and as the procedure is growing in popularity the profession ought to consider the logicality of the arguments upon which it is founded.

Diseases of the Nose, Throat, and Ear, Medical and Surgical. By WILLIAM LINCOLN BALLENGER, M.D., Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois. Third edition, revised and enlarged. Illustrated with 506 engravings and 22 plates. London: Henry Kimpton; Glasgow: Alexander Stenhouse. 1911. Pp. 983. Price 28*s.* net.

Professor Ballenger's text-book on diseases of the throat, nose, and ear has reached its third edition, and within three years. The publisher's note states that "the phenomenal demand for three large editions of this work in much less than three years is explained by its combination of utility, completeness, and high authority." Many text-books, as distinct from monographs of original research, are like directories, inasmuch as they hold good only for the year in which they are published. The author in his preface informs us that the general purpose of the work is not changed. It was designed as a text-book for students, as a guide for practitioners, and as a book of reference for the specialist. The contents are no less comprehensive than the general purpose of the work. They include the medical as well as the surgical treatment of the diseases in the entire region of the nose, throat, and ear.

As the text-book has arrived at its third edition, it is necessary to mention only a few of the more important new features which have been introduced. Amongst these we notice a description of a plastic operation for the closure of a recent perforation of the septum of the nose. Briefly stated, in the words of the author, the operation is as follows: "When both mucoperichondria are torn during a submucous operation, thus making it probable that a permanent perforation will follow, the cartilage removed may be reintroduced between the membranes, and thus afford a bridge over which the granulating edges of the mucous membranes may extend and close the perforation." At the meeting of the British Medical Association held at Birmingham last year a paper was read in the Section of Laryngology, Otology, and Rhinology on the Submucous Resection of the Nasal Septum. In the discussion which followed upon the paper more than one speaker expressed the opinion that a perforation of the septum could not be looked upon as a tragedy or disaster.[1] In view of these opinions and also in view of the opinions at times expressed that the perforation of a septum obstructing the nostrils is a distinct advantage to the nose as an organ of respiration, it would seem that this operation for closing a perforation of the

[1] THE LANCET, August 19th, 1911, p. 514.

septum following upon the operation of the submucous resection of the structure is a work of supererogation. Certainly anxiety resulting from the perforation of the septum in the course of an operation to relieve distressing nasal obstruction should be considered unnecessary.

This edition of Professor Ballenger's work shows the prominence achieved by vaccine therapy in the treatment of infectious diseases of the accessory sinuses of the nose, ear, throat, and meninges. In previous editions mention of Vincent's angina has been absent but the subject is now included. The chapter dealing with foreign bodies in the larynx, the trachea, the bronchus, and the œsophagus has been revised by Dr. Chevalier Jackson, whose work and experience in this department of the specialty are well known. In the section dealing with diseases of the ear the functional tests of the vestibular apparatus have been revised by Dr. J. R. Fletcher, and the section on labyrinthine disease and its surgical treatment has been largely rewritten.

We have no hesitation in congratulating Professor Ballenger upon the success of his labours and in endorsing the remark made in his preface that his effort has been to reflect the high character of work being done by laryngologists and otologists all over the world.

Surgery of the Genito-urinary Organs. By J. W. S. GOULEY, M.D. London: Rebman, Limited. New York: Rebman Company. Pp. 531. Price 8*s.* net.

WHEN the medical student becomes qualified and enters on the practice of his profession he finds often that there are departments of surgery in which his knowledge does not come up to his requirements, and he has to supplement it in one way or another. It is perhaps in the diseases of the genito-urinary system that he feels the chief need for more information than is contained in the text-books employed for the purpose of passing his examinations, and for this purpose he cannot have a more convenient book than that before us. It is not too lengthy, and yet it contains all that the average practitioner is likely to want. In it are to be found many of those hints and points which are so valuable in the routine of practice, and yet are so rarely to be found within the covers of a manual. The author's style is easy and readable, and the numerous references to the history of the subject serve to enhance the interest of his work.

Lehrbuch der Chirurgie. Bearbeitet von Prof. KLAPP, Berlin; Prof. KÜTTNER, Breslau; Prof. LANGE, München; Prof. LANZ, Amsterdam; Prof. PAYR, Königsberg; Prof. PERTHES, Tübingen; Prof. POPPERT, Giessen; Prof. PREYSING, Cöln; Prof. DE QUERVAIN, Basel; Prof. J. RIEDINGER, Würzburg; Prof. RITTER, Posen; Prof. ROVSING, Kopenhagen; Prof. SAUERBRUCH, Zürich; Prof. SCHLOFFER, Innsbruck; Prof. TILMANN, Cöln; Prof. WILMS, Heidelberg; Prof. WULLSTEIN, Halle. Herausgegeben von Prof. WULLSTEIN und Prof. WILMS. Second revised edition. In three volumes. Vol. I., pp. 636. Vol. II., pp. 482. Vol. III., p. 602. Jena: Gustav Fischer. Price marks 28.50.

LESS than three years after the appearance of the first edition of this work a second edition has been required; this fact is in itself a proof of the value of the work and its appreciation by the medical public both of German-speaking countries and of other lands. Even in the short interval that has elapsed since the issue of the first edition many important changes have been made in surgery, and the editors have had the work revised so far at least as the short time allowed.

The trustworthiness of such a system of surgery is assured by the names of the contributors, and we may say that the quality of the product is fully equal to what might have been expected. The work is extensive, as may be gathered from the fact that it contains some 700,000 words, but even into so great a space as that it is difficult to compress the whole of surgery, so that here and there we cannot help wishing that a subject might have been treated more fully. We are not complaining of what is given, but we appreciate it so highly that we should like to have more. In a work of this character there must necessarily be numerous subjects on which differences of opinion exist, but a full discussion of these would require an immense amount of space, and, moreover, we must acknowledge that the authors have been very moderate in their articles, and that prominence is given to the various views that are held by different authorities. The illustrations are very good; for the most part they have been taken from photographs of cases, and the reproductions have been successful. The work is in every way a worthy product of German science.

Allen's Commercial Organic Analysis. Volume V. Fourth edition, entirely rewritten. Edited by W. A. DAVIS, B.Sc., A.C.G.I., and SAMUEL S. SADTLER, S.B. London: J. and A. Churchill. 1911. Pp. 704. Price 21*s.* net.

THIS volume deals with a very important group of commercial substances—viz., the tannins, leather, dyes and colouring matters, and inks. Mr. W. P. Dreaper contributes the interesting monograph on tannins, and his intimate acquaintance with the subject is evident from the references to the original work which he has contributed from time to time, chiefly in analytical directions. This section contains a valuable series of tables, and some idea of the multiplicity of tannins is furnished in the fact that no less than nine tables are devoted to recognition tests. The same author contributes the section on the analysis of leather, and it is interesting to note that he includes a water-penetration test and a water-absorption test. "Good sole leather," we are told, "takes about 170 to 250 hours" for water to penetrate it when the experimental piece of leather is tested under conditions described.

By far the larger portion of the volume is devoted to dyes and colouring matters, and if we include the special article on colouring matters in foods no less than 550 pages of the volume out of a total of 704 are occupied with these questions. Mr. Dreaper joins with Mr. E. Feilmann in the writing of the sections on "Dyes and Colouring Matters" and the "Analysis of Colouring Materials," while Dr. J. T. (not J. F., as is printed in two places in the title pages) Hewitt contributes the "Dyestuffs of Groups 6 to 12." These groups have been a special subject of study by Dr. Hewitt, and include the di- and tri-phenylmethane dyes, pyrone, xanthone, and fluoran dyes, indamines and indophenole dyes, azine dyes, oxazine and thiazine dyes, quinoline and acridine dyes, and the thiazole and sulphur dyes. In this section there are again some valuable tables setting out the commercial and scientific name of the dye, general characters, and reactions. The chapter on "Colouring Matters of Natural Origin" is one of the most interesting in the book, and is written by Professor W. M. Gardner, of Leeds, who is an admitted authority on the subject.

The section on the analysis of colouring materials is very carefully done, and analytical chemists will be grateful for the clear account of the methods of testing dye stuffs as well as for the somewhat extended presentation of the general reactions of dyed fibres. Over 80 pages in this section are given to tables of reactions. The chapter on "Colouring Matters in Foods" bears the evidence of American authorship, for one paragraph refers to the examination of "noodles," the meaning of which may not be clear to every English reader. It refers to a breakfast food

classed with spaghetti and macaroni. The section, however, is very complete and the information which it gives as to the colouring matters prohibited from use in foods by the United States authorities should receive careful attention in this country, where little legislative action is taken in regard to this matter. The volume concludes with a short section on "Inks," which affords interesting reading, besides some valuable hints to analysts and others.

We have represented here an immense amount of work, and great care has been taken to collect materials from trustworthy sources; the previous volumes are well succeeded by the present one.

The Diagnosis of Nervous Diseases. By PURVES STEWART, M.A., M.D. Edin., F.R.C.P. Lond., Physician to Outpatients at the Westminster Hospital, &c. Third edition, revised and enlarged. London: Edward Arnold. 1911. Pp. 477. Price 15s. net.

THE third edition of this well-known text-book on the diagnosis of nervous disease contains more illustrations and more material than the second edition, as it has been enlarged by about 30 pages. It has been brought thoroughly up to date by the incorporation of the latest information on such topics of present-day importance as pseudo-tumour, spinal anæsthesia, pituitary lesions, and so on. Since the appearance of the second edition three years ago the book has been translated into both French and German, a gratifying proof of the high opinion of its merits that has been formed by continental neurologists. It is not intended to take the place of larger and more ambitious text-books; its purpose is to present to the student and practitioner a compendium of neurological diagnosis, in which symptoms are described and followed out much as they would be in the actual examination of a case. It is written from an eminently practical standpoint; it is concise and readable, and the association of width of view with attention to minuteness of detail is noticeable in every chapter. In this connexion it may be consulted with advantage by the professing neurologist, since there are references to the very latest advances in diagnostic tests and methods. While the reader will not find himself burdened with unimportant and non-essential minutiæ of nervous anatomy and physiology, his perusal of the first two chapters of the book cannot fail to be instructive, for in them the author lays with adequate care just that general foundation of anatomical and physiological knowledge of the nervous system without which its pathology becomes meaningless.

We believe that this volume has been widely adopted as a text-book in different schools. There is none that can be more confidently recommended as fulfilling the requirements of student and practitioner alike, and we warmly welcome its reappearance because both of its attractive form and of its excellent and well-chosen matter.

Analyse des Harns, zum Gebrauch für Mediziner, Chemiker und Pharmazeuten, zugleich elfte Auflage von Neubauer-Huppert's Lehrbuch. Bearbeitet von A. ELLINGER, F. FALK, L. J. HENDERSON, F. N. SCHULZ, K. SPIRO, und W. WIECHOWSKI. Erste Hälfte. Wiesbaden: C. W. Kreidel; Glasgow: F. Bauermeister. Pp. 682. Price 15s.

THIS is practically a new book, but it is founded upon the well-known work of Neubauer and Huppert. It is the work of several writers, each of whom has devoted special attention to the branch of the subject which he has undertaken. Henderson, of Boston, has contributed the section on the physical and chemical properties of the urine, including its reaction to polarised light; Spiro, of Strasburg, has written the chapter on the inorganic constituents of urine; Schulz, of Jena, has supplied the chapter on the non-nitrogenous compounds; while Wiechowski and Ellinger are responsible for the account of the substances containing nitrogen. It will thus be seen that this, the first, part of the work deals only with normal constituents of urine, the consideration of the abnormal constituents being reserved for the second part to be subsequently published. This statement will be sufficient to show the very thorough manner in which the book has been written. The processes and tests to be employed in the examination of urine are fully described.

The references to the literature of the subject are numerous, and in most cases are given directly to the original paper in which the method was first described, so though most of them are to German articles and works, some are to English sources. For instance, the reference for the account of Moore's test for sugar in the urine is given to the article in THE LANCET of Sept. 26th, 1844. The work proves to be very complete, and the utmost care has evidently been taken to supply all the information that could be required by workers in this branch of science. When the second part is issued the whole will form the most complete treatise on urinology existing.

Veterinary Bacteriology: A Treatise on the Bacteria, Yeasts, Molds, and Protozoa Pathogenic for Domestic Animals. By ROBERT EARLE BUCHANAN, Ph.D., Professor of Bacteriology in the Iowa State College of Agriculture and Mechanic Arts, Division of Veterinary Medicine; Bacteriologist of the Iowa Agricultural Experiment Station. With 214 Illustrations. London and Philadelphia: W. B. Saunders Company. 1911. Pp. 506. Price 13s. net.

THE United States Government departments which correspond roughly to our Board of Agriculture spend large sums of money on researches bearing upon agriculture, and very valuable results have been obtained in their experimental stations. Whether as a result of this encouragement or not the American public appears to take an enlightened interest in the scientific side of agriculture, and a number of works dealing with bacteriology in its relation to the dairy and general agriculture have issued from the American press.

The present work treating of veterinary bacteriology by the bacteriologist to the Iowa agricultural station is a clear, business-like, well-arranged, and accurate presentation of its subject, but will appeal more especially to those whose ideal of education is teaching rather than learning. The volume is based on a course of lectures given to students of veterinary medicine in the Iowa State College, and it casts a curious sidelight on the general education that it should be considered necessary to give the singular forms of such words as septa, hyphæ, exanthemata, and so on.

The author states his aim to be "to put in usable form that fund of knowledge concerning bacteriology which the student of veterinary medicine should master." The matter is divided into six sections, of which the first two deal with general considerations of morphology, classification, cultivation and demonstration. As the author disclaims the intention of making his work a text-book of pathology or a manual of laboratory practice, this disarms criticism of the somewhat sketchy but possibly sufficient treatment of these sections. The third section, in which immunity and the constitution of the various antibodies are discussed, is a clear and praiseworthy exposition of the subject.

The fourth and longest section deals with the pathogenic micro-organisms, exclusive of the protozoa. It is natural to look here for a treatment somewhat different from that adopted in the ordinary medical text-book. It must be confessed, however, that the work would serve almost equally well for the medical as for the veterinary student. The organisms dealt with are for the most part those found in medical text-books, and in a few cases organisms special to man are included. This is in part no doubt due to the fact that it is on work done on human disease that many of the fundamental ideas on immunity, treatment, and diagnosis

are based. We miss, however, any insistence on matters important to the veterinary surgeon in dealing with food-poisoning epidemics, the relation of diphtheria and tubercle to milk, the connexion of human ringworm with similar diseases in animals, and other like matters. Water examination and purification are briefly treated, but there is no section on milk. The statement that T.R. has not come into use should be reconsidered.

The fifth section concerns the pathogenic protozoa, and is of great importance in view of the number and serious character of the animal diseases caused by protozoa, and the frequency with which the animal acts as a carrier for human parasites. The final section deals with diseases produced by ultramicroscopic organisms. A short bibliographical index is appended. The book is well illustrated with blocks, the majority of which are from the Atlas of Fraenkel and Pfeiffer. It is well printed and of good appearance.

Manual of Psychiatry. By J. ROGUES DE FURSAC, M.D. Translated and edited by A. J. ROSANOFF, M.D. New York: John Wiley and Sons. 1911. Pp. 484. Price 8s 50.

THIS book is the third American edition translated from the third French edition. The new matter which has been introduced has enlarged the volume by about 80 pages. Much of the fresh material is from the pen of the editor, and includes sections upon the Mendelian hypothesis, psychotherapy, chemical tests for certain abnormal substances in the cerebro-spinal fluid, and a description of the Wassermann reaction. As a handy account of the findings of the psychiatry of to-day the book may be commended. The first part is devoted to general psychiatry, and contains an account of the various symptoms that may be met with, while the second part is composed of an account of the aggregations of symptoms forming the recognised syndromes. It has too often happened in the past that the somatic phenomena which are associated with mental disorder have been disregarded, but in the present work their significance is accentuated. Treatment is so often vitiated by ignoring the physical illness or debility which accompanies mental disorder that it becomes highly desirable that stress should be laid upon the bodily state. The author, while admitting the existence of dementia præcox as a clinical entity, criticises the name. He points out that the dementia present is often very slight in amount and selective in character, so that certain particular faculties may be affected while others are left intact. So far as the adjective "præcox" is concerned, it is certainly not the rule that the disease always runs a rapid course ending in dementia, or that it necessarily occurs at an early age, and there is but little doubt that the name given to the disease has hindered the acceptance of the conception it covers. The description of the Mendelian hypothesis, taken from another work of the editor, is adequate and good.

Handbuch der Vergleichenden Physiologie. Herausgegeben von HANS WINTERSTEIN. 16. Lieferung. Band IV.: *Physiologie der Reizaufnahme, Reizleitung, und Reizbeantwortung.* Erste Hälfte. Bogen 21–30. Jena: Gustav Fischer. 1911. Pp. 321–480. Price 5 marks.

THIS part winds up what Dr. Baglioni has to say about the physiology of the nervous system of insects.[1] Substantially it deals with the physiology of the nervous system of vertebrates, beginning with fishes and, of course, with amphioxus, and then passes on to cartilaginous and osseous fishes. To the average reader the account of the pigmentary or colour changes in soles and other flat fish, a study begun by Pouchet and recently brought into popular prominence by the work of Dr. Francis Ward, of Ipswich, will prove very attractive. The velocity of conduction in the nerves of fish, frog, and man is noted, but the chief interest centres round the effects produced by removal of the cerebral centres, on the one hand, and stimulation of these centres on the other, in different animals. Naturally the author draws largely on the well-known observations on fish of Steiner and of Bethe. The frog, as a typical amphibian, is next considered, and the work of Goltz on the effects of removal of certain parts of the brain is admirably summarised (pp. 352–413), and so is that of Steiner and Schrader on the same subject, as well as the later work of Verworn, the worthy successor of Pflüger in Bonn, on tonic reflexes.

The reptilia (pp. 413–423) are next dealt with, and the work of G. Fano on the results of removal of the brain in the tortoise is summarised. As to snakes, we must go back to the excellent work of Tiegel on the spinal cord, and to that of Luchsinger. The author carries us *gradatim* and historically to Biedermann's work on the chameleon—a subject initiated as well as illustrated by Brücke. Birds and the functions of the "brain centres" and related subjects occupy pp. 424–437, and just at the end Langley's work on the sympathetic system of birds and on the muscles which move the feathers is referred to (1904). This constitutes the fourth chapter.

The fifth chapter deals with mammals, but according to the author the subject is so well treated in the text-books—especially in regard to the nervous system of the dog and ape and localisation—that he confines himself to what is known as to the physiology of the nervous system of bats (pp. 438–440), and then in Part II. of the same chapter (pp. 441–450) he deals with the other mammals. The work of Sherrington should have found a larger place than it occupies.

The bibliography is long, but not complete. Some names are omitted that ought to have been included. The last few pages are occupied by the beginning of the article on Tropisms by Professor Jacques Loeb.

[1] See review of earlier section, THE LANCET, Sept. 16th, 1911, p. 830.

LIBRARY TABLE.

Tropical Hygiene for Anglo-Indians and Indians. By the Honourable Surgeon-General C. P. LUKIS, M.D. Lond., C.S.I., and Major R. J. BLACKHAM, R.A.M.C. Calcutta: Thacker, Spink, and Co. London: W. Thacker and Co. 1911. Price 4*s.* 6*d.* net.—This book has been compiled as a manual of instruction for the senior certificate in home hygiene of the St. John Ambulance Association in India, and is divided into ten chapters corresponding with the ten lectures that form the authorised syllabus of instruction. The first is entitled the Communicable Diseases of the Tropics, and deals shortly with cholera, dysentery, plague, enteric fever, and tuberculosis. In the second chapter malaria is treated somewhat fully, and mention is made of kala-azar and sand-fly fever. Then follow chapters on air, water, food, clothing, houses, and refuse disposal as regards the conditions of hot climates. A full description of tropical insects is given in relation to disease, with numerous illustrations, and finally disinfection is treated briefly but sufficiently. The book is written in a popular style, and the facts are made as easy of comprehension by readers untrained in medical science as the nature of the case admits. The authors advise that cholera stools should be burned or buried; it is not always easy to burn a cholera stool; boiling is the safest and easiest method of disposal if heat is available. Neither in the preventive precautions against cholera or dysentery is any mention made of protecting the abdominal viscera by wearing a flannel belt; this seems to us a real omission. On p. 10 the authors state that in enteric fever the urine and expectoration are equally dangerous with the stools in

spreading infection; this is certainly quite true for the urine, but can hardly be maintained in reference to the sputum. The information as to malaria causation and prevention are excellent; the authors have put it very tersely in the sentence: "In a general way it may be said that when malarial fever occurs in Europeans, the latter have acquired it from mosquitoes that have previously bitten an infected Indian, who is more often than not one of his [their] own servants or a child in the compound." The authors rightly say that the natives of India have not yet realised the importance of fresh air; but the number who die annually in India is not 37,000, as stated on p. 45, but 37 per 1000; the death-rate is now rather lower, and, of course, the slip is obvious. The statement that in a certain hospital, after the ventilation was improved, the deaths were "nine-tenths less than before," which means a reduction of mortality to one-tenth of that previously existing, is significant. Is not allowance of two pints of liquid daily, over and above moisture in food, in temperate climates (p. 47) very small, and would it be generally accepted? We are glad to note that stress is laid on the fact that no filters of the Pasteur-Chamberland or Berkefeld type can be useful in the tropics unless a rough clarifier is attached. More stress might perhaps have been laid on the dangers of milk in tropical countries. Milk pasteurisation might have been described, as it is extremely valuable for use in India. The account of insect parasites is excellent and fully illustrated. We have pointed out several small matters of detail which can readily be corrected. Of the manual as a whole we can speak most favourably. It contains a large amount of information, clearly expressed, and (with the trifling emendations suggested) will admirably serve the purpose for which it has been compiled.

The Canada Year Book, 1910. Second Series. Ottawa: C. H. Parmelee.—In this Year Book, which, though dealing with 1910, and having its preface dated July, 1911, has only just put in a belated appearance, there is a large amount of useful information with regard to Canada, consisting principally of statistics relating to population, agriculture, and manufactures. The population statistics are compiled from the census reports, and give figures for the two decennial periods 1871 to 1901 with regard to such matters as sex, conjugal state, birthplace, race, and religion. The mortality rates for the periods named are also given, as well as the school attendance figures and the status of education. The details with regard to imports and exports have been made more complete than those of previous editions of the book, and there is a brief account of the chief events of the year 1910.

MISCELLANEOUS VOLUMES.

MANY books of varied character, some of them having little connexion with matters medical, save the very remote one that all things which exercise on man even the slightest influence are to that extent the concern of medical science, lie on the editor's table.

The Climate of the Continent of Africa, by ALEXANDER KNOX, B.A. Cantab., F.R.G.S. (Cambridge University Press, 1911. Price 21*s.*), is really a scientific treatise of importance as is evidenced by the fact of the assistance given to the author by the Royal Geographical Society and several other British and foreign geographical, meteorological, and other societies, and by various Government officials and distinguished travellers. Though obviously a marvel of painstaking research, the subject is one that would hardly justify the elaborate pains and the space in our columns necessary to do justice to the book.——The translation of the *Oedipus* of Sophocles into English rhyming verse by Mr. GILBERT MURRAY, LL.D., D.Litt., Regius Professor of Greek in the University of Oxford (London: G. Allen and Sons. 1911. Price, net, paper, 1*s.*; cloth, 2*s.*), has a special interest just now, owing to the production of that great drama in London under the direction of Max Reinhardt, who has already scored a brilliant success with the play in Berlin. The *Oedipus* is pre-eminently a human play, and it is because of its sustained but gradual unfolding of the plot with increasing grip up to the final catastrophe that it will always take a foremost rank in tragedy. Professor Murray's translation is scholarly, especially in the fact that though fairly close to the original it is no mere rendering of words for words, but it carries the reader with it into the original atmosphere of the play.——The *Divine Comedy* has been translated many times into English with varying success. The latest attempt is particularly ambitious because the translator, Mr. C. E. Wheeler, has essayed to render Dante's immortal trilogy into rhymed verse, keeping the triple rhythm of the original. This new translation is published in three convenient little volumes, entitled respectively "Hell," "Purgatory," and "Paradise" (London: J. M. Dent and Sons. 1911. Price 2*s.* 6*d.* each, net). In spite of weaknesses (how should it be otherwise?) Mr. Wheeler's version deserves a place among the better English translations of the *Divine Comedy*, while its size and price place it within the reach of many ordinary readers to whom the standard editions are somewhat inaccessible. The translator acknowledges his debt to the Temple edition, from which he has taken the arguments and notes. It is almost impossible to preserve a uniform level of achievement in a translation which undertakes the double task of reproducing the original meaning, style, and rhythm, and yet of preserving the best features of rhymed English verse. This is not the place to pick out either good lines or bad lines—though we have found many of each—and we will only say that every lover of Dante who appreciates careful, reverent translation and dexterous versification should read Mr. Wheeler's rendering.——In *The King to His People* (London: Williams and Norgate. 1911. Price 5*s.* net) are collected the speeches and messages of His Majesty King George V. as Prince and Sovereign. Naturally they touch on a wide variety of subjects, with only a few of which is the medical profession even indirectly interested. Still, even so, there are subjects, such as the Opening of the National Physical Laboratory, the London Orphan Asylum, The Housing Problem, The Doctor, A Century of Medicine, Fighting the White Plague, Cancer Research, "Bart.'s," The Rule of Science, Homeless Children, Hospital Problems, Boy Scouts, and others, which manifest His Majesty's deeply sympathetic feeling towards the importance of medical affairs in their close relation with human welfare at large.——The high place of Darwin in modern science is, we imagine, too well established to be upset by Mr. Herbert Morse's philosophical and critical study of Darwin's theory of "Natural Selection," in his book, *Where Do We Come From? Is Darwin Correct?* (London: Kegan Paul, Trench, Trübner, and Co., Limited. 1911. Price 7*s.* 6*d.* net). Doubtless much has been discovered since Darwin's time which he would willingly have taken into consideration had the knowledge been then available, and in the light of which he would doubtless have made such modifications in his own views as seemed necessary. The whole history of his life shows that he was far too real a scientist to lay down his theories first and then endeavour to make facts square with them. He was first of all a patient observer, accumulating and classifying facts, then drawing his inferences and establishing his theories as they appeared to emerge from his ordered data. To say that all his conclusions were final would be to claim for him omniscience. Finality is not to be expected in science. Conclusions can hold only until new data appear, which, being unknown or even undreamed of when the conclusions were drawn, could not be taken into account. Science

recognises a process of repeated stocktaking and re-adjustment.

Turning to more strictly medical books, we find a thesis for the Doctorate in Medicine of the University of Venezuela, by P. F. ARREAZA CALATRAVA, on *La Peste en Caracas: Epidemias de 1908–1909–1910* (Caracas: Tipografia Americana. 1911), which discusses its subject with praiseworthy thoroughness from the points of view of the epidemiological data, the etiology and pathological anatomy, the protogenesis and pathogenesis, the clinical forms, the diagnosis and prognosis, the treatment, and concludes with a series of clinical observations and temperature charts. In regard to the treatment of bubonic plague, the author holds that extirpation of the buboes, so gratuitously decried by some and so over enthusiastically praised by others, will undoubtedly become generally accepted as a rational and scientific treatment when its indications can be made more precise by a tranquil and impartial analysis of conditions. The tables of cases in which this operation was performed seem to lend some colour to his expectations.——From epidemic disease to public health is a natural transition, and the *Pocket Notes and Remembrancer for Sanitary Inspectors and all engaged in Public Health Work*, by J. T. COWDEROY, Chief Sanitary Inspector to the Borough of Kidderminster, now in its fourth edition (London: The Sanitary Publishing Co., Limited. 1912. Price 2*s.* net) affords a considerable amount of material that would be useful to those for whom the little book is especially written and also to many practitioners, especially in country districts. It consists of summaries of the various Acts relating to Public Health, Housing of the Working Classes, River Pollution, Infectious Diseases, Sale of Food and Drugs, Sanitary Defects and Nuisances, Slaughter-houses, Canal Boats, Shop Hours, Factories and Workshops, Burial Grounds, and Meat Inspection. There are sections on microscopic stains and methods of staining and on methods of disinfecting clothing, cesspool requirements, technical terms in use in the different professions and trades that come into contact with sanitary work, the Housing and Town Planning Act, and so forth.——In *Health Readings*, by C. J. THOMAS, M.B., B.Sc. Lond., D.P.H. (London: Methuen and Co., Limited. 1911. Price 1*s.* 6*d.*), we begin at the very beginning of the subject. This is "a book all about the body and the things which do it harm and the ways which keep it well," written in the colloquial style, midway between the didactic and the catechetical, calculated to catch the interest of juvenile readers and carry them along in the study of their own natures and physical organisms. Starting with the difference between living and dead things the body is first described in admirable simplicity, and the effect on it of clothing, food, fresh air, housing, cleanliness, exercise, rest, and sleep are so discussed as to impart without any special effort of learning a considerable amount of physiological knowledge. A few simple instructions for the more ordinary accidents conclude the book.——Both sport and the Riviera are mentally associated with health and hygiene, and in *Sport on the Riviera*, edited by EUSTACE REYNOLDS BALL, F.R.G.S., and C. A. PAYTON, M.V.O. (London: 27, Chancery-lane. 1911. Price 2*s.* 6*d.*), we find an excellent attempt to deal with popular winter resorts from the purely recreative side. Golf, lawn tennis, motoring, cycling, river-, lake-, and sea-fishing are discoursed of in a way to attract the attention of many who have hitherto regarded the Riviera as a collection of places for the invalid or the fashionable world. The list of writers includes, besides the editors, Arthur S. Browne, J. D. E. Loveland, C. N. Williamson, Captain E. D. Miller, D.S.O., A. W. Rumney, H. R. Reynolds, M.A., and "Sarcelle," of *The Field*, all of them authorities in their special fields.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Medicine. Edited by WILLIAM OSLER, J. ROSE BRADFORD, A. E. GARROD, R. HUTCHISON, H. D. ROLLESTON, and W. HALE WHITE. Vol. V., No. 18. January, 1912. Oxford: At the Clarendon Press. Subscription price, 25*s.* per annum. Single numbers, 8*s.* 6*d.* net each.—The contents of this number are: 1. The Adrenal Cortex, its Rests and Tumours; its Relation to other Ductless Glands, and Especially to Sex, by Ernest E. Glynn. The objects of this paper are described as being to classify and describe the commoner adrenal tumours upon a combined clinical and histogenetic basis; to draw attention to the relation between the adrenal cortex and other ductless glands, and especially to its relation to sex characters; and to present new reasons against the hypothesis that renal hypernephromata are derived from adrenal rests. The adrenal cortex is regarded as being specially connected with growth and sex characters; the medulla with blood pressure. Adrenal hypernephromata are associated with sex abnormalities, almost invariably in children, usually in adult females before the menopause, but apparently never in adult females after the menopause nor in adult males. Rests from the adrenal cortex are common in certain localities, especially in infancy, except in the kidney. Various reasons against the hypothesis of Grawitz that the tumours called renal hypernephromata arise from remnants of adrenal cortex are given. The paper has a long list of references and is illustrated by a plate. 2. The Antigen (Vaccine) Treatment of Enteric Fever, by F. J. Sadler. The term vaccine, though generally employed, is considered inappropriate and is used under protest, the alternative of antigen treatment being suggested. Details of a number of observations are given, and the general conclusions arrived at are that the treatment of enteric fever by vaccines makes average cases mild, severe cases average, and that it is only the very worst cases which are not favourably affected. The usual dose given was one of 2,000,000 bacilli to an adult and proportionately less to children. The interval between the injections was reduced in the later observations, and that now advised is about four or five days with an outside limit of six. The dose should also be influenced by the nature of the case. If this is severe, and especially if it is of cerebral type, a dose of 1,000,000 bacilli for an adult and proportionately less for a child is advised. 3. On Myotonia, by T. Wardrop Griffith. Three cases of Thomsen's disease occurring in one family are described, and in two of these the symptoms were of special interest, since in one they were transient and in the other they diminished greatly in severity and ultimately disappeared. Under the name of myotonia atrophica et hypertrophica Dr. Wardrop Griffith describes a case in which there were symptoms of myotonia in a pronounced form accompanied by marked atrophy of some groups of muscles and an enlargement of those of the calves. In the light of his experience Dr. Griffith thinks that the view usually held that the condition never passes off is unduly pessimistic. The paper is illustrated by several plates. 4. The Distribution and Excretion of Radium and its Emanation after Internal Administration, by E. Bellingham Smith. It was found that after giving radium by the mouth or by injection a widespread degree of radio-activity is evident throughout the body, and that the elimination of radium takes place principally and rapidly by the bowel, and in a minor and slower degree by the kidneys. In mice there was no evidence that the liver or skin played any part in excretion. The emanation can be obtained in solution and can be introduced into the body by inhalation, feeding, or injection. It is eliminated chiefly by the lungs and to a very small extent by the kidneys. 5. Two Cases of Paroxysmal Bradycardia (Total), by

E. E. Laslett. In both cases the slow heart beat was paroxysmal and was due to a true or total bradycardia in which both auricles and ventricles participated. The condition was therefore in both distinct from heart-block. 6. Cardio-respiratory Murmurs, by Carey Coombs. The paper is based upon the notes of 180 cases. Two groups are differentiated: in the first the murmur is often associated with pulmonary collapse and is usually heard chiefly or solely at the base of the heart. In the second group it is best heard just outside the apex beat and is associated with pulmonary tuberculosis and nervous excitement. Dr. Coombs agrees with the view that in the second group, at any rate, the murmur is a peculiar type of friction sound. 7. Primary Occlusion of the Ostia of the Hepatic Veins, by Theodore Thompson and Hubert M. Turnbull. Three cases are described with full details of their microscopical characters, and a review of other published cases is given. 8. Critical Review: The Digitalis Preparations employed in Medicine, by W. E. Dixon. The various active principles are individually considered, and Professor Dixon concludes that pharmacological and clinical investigations have not made a clear case for the substitution of "active principles" for galenical preparations of digitalis in the treatment of patients. They are for the most part just as irritant as the infusion or tincture, and are neither more trustworthy and constant in action than a properly standardised tincture, nor are they absorbed more rapidly. The one advantage certain of them possess is that they may be given intravenously without ill-effects.

The Journal of Vaccine Therapy.—The first issue of a new journal, entitled the *Journal of Vaccine Therapy* and dated Jan. 1st, lies before us. It is edited by Dr. R. W. Allen and is published by Mr. H. K. Lewis at the price of 1*s.* per issue, or 10*s.* 6*d.* annually post free. We are informed that it is "founded neither in order to afford a medium for the undue pressing of the claims of Vaccine Therapy to a place in modern therapeutics nor to advertise the merits of any particular brand or brands of vaccines." The present number contains a paper by Dr. R. J. M. Buchanan on the Pathogenesis and Treatment of Rheumatic Fever and Chorea, in which the claim of "rheumatism" is upheld to be an acute specific disease and an infection. After a discussion on the treatment generally used, the author relates his experience, with illustrative cases, of a vaccine made from micrococcus rheumaticus, which he concludes has a definite effect on acute rheumatism when given early in the attack. In two cases it has shown a definite effect on the endocarditis. He does not depreciate the usefulness of the salicylates and other remedies, but considers that cases of rheumatic fever and chorea are assisted beneficially by the vaccine treatment. Dr. F. J. Sadler describes the vaccine treatment of typhoid fever, and Dr. R. W. Allen discusses Acne, its Causation and Treatment. The editor calls special attention to the fact that in reporting cases it is highly important to mention the immunising potency of the vaccines used (which differs materially in different products) as well as the dose given.

The Journal of the London School of Tropical Medicine.—The progress made by the London School of Tropical Medicine, since its establishment on a small scale in 1899, in the opinion of the school committee justifies the publication of a journal devoted to tropical medicine and conducted by the staff, together with the past and present students of the school. At first the journal is to be issued about the middle of each session—that is, three numbers in each year, the numbers to consist of about 100 pages each. The various articles will be arranged under the headings of Clinical Medicine, Pathology, Bacteriology and Hygiene, General Medical Zoology, Protozoology, and Helminthology, the teachers of these several departments at the school having charge of them. The editor-in-chief is Sir Patrick Manson, with Dr. C. W. Daniels as general editor, and Colonel A. Alcock, C.I.E., F.R.S., Professor R. Tanner Hewlett, Dr. R. T. Leiper, Mr. H. B. Newham, and Dr. C. M. Wenyon as sectional editors. It is published by Messrs. Taylor and Francis, Red Lion-court, Fleet-street, E.C., price 3*s.* each number or 7*s.* 6*d.* per annum. In the first issue, dated December, 1911, Colonel Alcock reviews some recent publications relating to medical entomology. Dr. A. Hutton writes on the Morphology of Oxyuris Ambiguus Rud: Type of the Genus Passalurus. Dr. Leiper contributes Notes of Recent and Some New Records of Helminthes in Man, of which there are few records; also a check list of Helminthes Parasitic in Equines, an account of a new Echinostome Parasite in Man, and a method for dealing with Town Wells Infested with Guinea-worm; Dr. F. P. Minett discusses the question of Flies as Leprosy Carriers; Mr. Newham has some Notes on the Examination of Rats for Plague and a consideration of the Leucocytic Variation in Trypanosomiasis; Dr. H. Bayon, Craggs Investigator, London School of Tropical Medicine, writes of Acid-fast and Acid-resisting Germs cultivated from Cases of Human Leprosy and their Determination, the results of his independent research, confirming almost in detail those of Captain T. S. B. Williams, I.M.S., whose work as well as that of Major E. R. Rost, I.M.S., has been already mentioned in our columns[1]; Dr. K. S. Wise deals with the Treatment of Leprosy in British Guiana; Dr. C. W. Daniels reports a series of cases of Trypanosomiasis in England, mainly at the London School of Tropical Medicine. There are in addition under each section abstracts of the more important communications relating to tropical medicine in the various journals.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

A QUARTERLY meeting of the Council was held on Jan. 11th, Mr. RICKMAN J GODLEE, the President, being in the chair.

The SECRETARY reported the death, on Dec. 22nd last, of Professor O. M. Lannelongue, of Paris, an Honorary Fellow of the College. The President was requested to write a letter of condolence to the family.

Mr. R. H. Burne's resignation of the office of Assistant Conservator was accepted, and the best thanks of the Council were given to him for his valuable services to the College during the last 20 years in the offices of Anatomical Assistant in the Museum and Assistant Conservator. Mr. Burne was then appointed Physiological Curator.

The name of a Member of the College was ordered to be removed from the roll of Members; his name had previously been removed from the Medical Register.

The Council appointed Sir W. Watson Cheyne a member of the Court of Governors of the University of Birmingham in the vacancy occasioned by the retirement of Sir Henry T. Butlin.

Mr. Rickman J. Godlee, the President, was appointed Hunterian orator for February, 1913.

A letter was read from the Royal Commission on University Education in London, stating that the Commission would be obliged if the College would submit for its information a statement upon dental education in London and nominate a witness or witnesses to represent the College before the Commission. A committee was appointed.

A committee was appointed to watch the interests of the Fellows and Members under the Insurance Act, with power to confer with other committees formed with similar objects. The committee was instructed to report to the next meeting of the Council.

The PRESIDENT stated that the vacancy on the Court of

[1] See THE LANCET, June 3rd, 1911, p. 1538, and July 8th, 1911, p. 109

Examiners occasioned by the expiration of the period of office of Mr. J. Ernest Lane would be filled at the ordinary meeting of the Council on Feb. 1st.

The PRESIDENT announced that the Lord Mayor (Sir Thomas B. Crosby, F.R.C.S.) would be the guest of the College at dinner on May 3rd.

BRITISH MEDICAL BENEVOLENT FUND.

AT the December meeting 22 cases were considered, and grants amounting to £161 were made to 18 of the applicants. As the current account was already overdrawn to the extent of £215, the deficit was consequently increased to £376, and the committee earnestly appeals for support to enable it both to pay off this overdraft and to deal with the very distressing and numerous applications which are always received early in the year. Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W. Appended is an abstract of the cases relieved:—

Wife, aged 25, of M.R.C.S., L.S.A. Husband had to be removed to an asylum a few weeks ago, and applicant, who is in very bad health, is practically destitute. One child aged 14 months. Voted £10.

Daughter, aged 27, of late L.R.C.P. Edin. Has been employed as a telephone clerk for the last ten years, but is in feeble health and has therefore decided to endeavour to support herself by letting lodgings. Voted £5.

Widow, aged 65, of L.R.C.P. Edin. Supplements an annuity of £20 by addressing envelopes, &c., but finds increasing difficulty in getting employment. Relieved 14 times, £141. Voted £5.

Widow, aged 53, of L.R.C.P. Edin. Has been deprived of a home by the recent death of a relation, and is dependent on a few shillings a week allowed by her mother-in-law. Relieved four times, £20. Voted £10.

Wife, aged 48, of M.R.C.S. Is separated from her husband through no fault of her own, and endeavours to support herself and six children, aged 17 to 9, by letting lodgings. Relieved twice, £24. Voted £5.

Daughters, aged 57 and 53, of late M.R.C.S. Health indifferent, and attempt to maintain themselves by taking lodgers or boarders, but have had a very bad season. Relieved seven times, £34. Voted £12.

Widow, aged 66, of L.R.C.P. Edin. Only income £20 a year from a small house, of which the lease has nearly expired. Relieved 12 times, £138. Voted £12.

Widow, aged 65, of M.R.C.S., L.S.A. Quite unprovided for at husband's death about 12 months ago, but hopes to support herself by taking a resident patient or boarders. Relieved once, £6. Voted £6.

Widow, aged 52, of L.S.A. No income and entirely dependent on her earnings from needlework, in which she is assisted by the younger of two daughters. Elder daughter, aged 18, earns a few shillings a week by teaching. Relieved five times, £46. Voted £12.

Widow, aged 63, of L.S.A. Only income £12 a year; children unable to give more than slight help. Relieved twice, £24. Voted £12.

Widow, aged 50, of M.R.C.S. No income, and is endeavouring to establish a boarding house. Relieved twice, £20. Voted £10.

Daughter, aged 62, of late M.D. Edin. Used to be a companion, but gave up her post a few years ago to nurse her two elder sisters, who are both chronic invalids. Only income £10 a year allowed by a friend. Relieved six times, £72. Voted £12.

Widow, aged 47, of L.K.Q.C.P.I. Quite unprovided for at husband's death and dependent on letting lodgings and needlework. Relieved once, £5. Voted £5.

Widow, aged 74, of M.R.C.S. Has a small income, but asks for a little help to meet quite unavoidable expenses. Relieved once, £12. Voted £5.

Widow, aged 61, of M.R.C.S. Quite unprovided for at husband's death three years ago, and finds great difficulty in obtaining a suitable post even in exchange for a home. Relieved twice, £26. Voted £12.

Widow, aged 66, of M.R.C.S. Is quite destitute except for small uncertain earnings from needlework. Relieved twice, £24. Voted £12.

Widow, aged 83, of M.R.C.S. Only means of support an annuity of £10 and an old age pension of 5s. a week. Relieved once, £6. Voted £6.

L.S.A., aged 67. Practises in a thickly populated neighbourhood, but finds great difficulty in getting paid, and is in consequence in arrears with his rent. Health very indifferent. Relieved twice, £36. Voted £10.

New Inventions.

A NEW EVACUATOR FOR LITHOLAPAXY.

MOST evacuating bottles used in the operation of litholapaxy are made with two metal collars, one fixed to the neck of the rubber reservoir, the other fixed by cement to the glass neck of the bottle. The instrument is "assembled" by fixing the glass bulb to the rubber bottle by means of a bayonet joint on the two metal collars. This is a perfectly adequate means of "fastening" the two halves of the evacuator together, but it labours under the grave disadvantage of making it impossible to sterilise the instrument by boiling. After boiling once or twice the cement fixing the metal collar to the glass becomes loose, and the instrument first begins to leak and very shortly the glass and metal come apart. Mr. J. H. Montague, of 69, New Bond-street, London W., has, at my suggestion, made an evacuator which can be boiled again and again without this disadvantage.

The accompanying illustration shows the method adopted. A is the rubber reservoir, B is the glass bulb.

Both the rubber neck of the reservoir and the glass neck of the bulb are made very long. The rubber neck is encircled by a metal collar, C, which can be tightened or loosened in a moment by the little patent lever, D. To use the instrument the lever D is pulled open, the bulb B pulled out of the rubber neck of A, the two halves are filled with sterile water and are now placed together again. The lever is drawn down, forming an impermeable joint, and the evacuator is ready for use. After a certain length of time the rubber where it is embraced by the metal collar tends to perish, but as the rubber neck is very long it is only necessary to cut off the perished portion.

I have now had this instrument in use for a considerable time, and find that it gives me every satisfaction.

London, W. JOHN PARDOE, F.R.C.S. Eng.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of the above society was held on Jan. 10th, at 11, Chandos-street, Cavendish-square, W., Dr. Walter Rigden, senior vice-president present, in the chair. Fourteen directors were present, amongst them being Sir Thomas Crosby, Lord Mayor of London, one of the vice-presidents who consented to be nominated as President of the society, to fill the vacancy caused by the death of Dr. G. F. Blandford. Since the last court one of the vice-presidents of the society, Sir Samuel Wilks, has died. Three gentlemen were elected members of the society. The sum of £1288 10s. was voted for the payment of the half-yearly grants to the annuitants of the charity. The grants to the orphans have been increased from £15 per annum to £25. The invested funds of the society now amount to £101,600. Membership is open to any registered medical practitioner who at the time of his election is resident within a 20-mile radius from Charing Cross. The annual subscription is 2 guineas, but life membership may be obtained by the payment of one sum, the amount of which depends on the age of the candidate. Relief is only granted to the widows and orphans of deceased members, and letters are constantly being received from widows of medical men asking for relief, but this has to be refused as their husbands had not been members of the society. Application forms for membership and full particulars may be obtained by application to the secretary at the offices of the society, 11, Chandos-street, Cavendish-square, London, W.

THE LANCET.

LONDON: SATURDAY, JANUARY 20, 1912.

The National Insurance Act.

DURING the week the movement has grown among medical men which is intended to resist the working of the National Insurance Act until far stronger and more categorical safeguards than are conveyed to them by the wording of the measure are forthcoming. The protesters find that under the Act they may be overworked and badly paid; that they are, in fact, offered a remuneration which is quite inadequate, when the cost of their education, the anxious nature of their services, and the physical strain involved in those services are taken into consideration. Mr. WILFRID TRAVERS, the business manager of the Reform Committee of the British Medical Association, informs us that the accommodation in Villiers-street, Strand, has not proved commodious enough for the volume of business which has already arisen, and that offices have now been opened at 29, Old Queen-street, Westminster. The Committee, we understand, are receiving wide support to their demand for an Act of Parliament amending the National Insurance Act, in accordance with the declared object of the organisation, as settled at the recent Hammersmith meeting and reported in our columns; and it is to this end that appeal is made to members of the medical profession to join the movement. We trust that the Committee will appreciate the difference between those who join them out of a mere facile adherence to their programme, with the idea that some good must come out of any organised resistance, and those who give definite promises of work to secure the carrying out of that programme.

We cannot ourselves feel sanguine that sufficient influence can be brought to bear upon the Government to obtain an amending Act which shall categorically secure for the medical profession the position laid down by the six cardinal points. The attitude of the Reform Committee in demanding such amendment, however, is entirely logical. A number of members of the medical profession declared, almost as soon as the provisions of the measure were made public, that they would not work under a scheme which did not meet what they maintained to be their just claims to consideration, and these they put in the form of an irreducible minimum. The measure became the law of the land without securing for the medical profession that minimum, although the Council of the British Medical Association were willing to believe that sufficient had been granted, and that the position of medical men under the Act was properly safeguarded. The Reform Committee, representing a large body of practitioners who cannot be persuaded to the same belief, therefore ask for immediate legislation amended in directions which they have declared over and over again to be necessary. But although this demand is, as has been said, entirely logical, the Committee cannot possibly hide from themselves that to enforce it will be very difficult. For our part, while the courage and sincerity of the Reform Committee are undoubted, we cannot help wishing that they had not taken their stand solely upon the six cardinal points, for we believe that their object could have been as well attained by a resolute intention to see that the regulations under which the work will have to be done are just and adequate—are, in fact, such as take our professional position into better consideration than the various sections of the Act appear to. There can be no attempt made to conceal the fact that the massive support of the six cardinal points has been obtained on a coöperative principle, many members of the medical profession having little hope that the most debated one of these points will be granted, and having not much enthusiasm for another point; but, none the less, all, through loyalty to their fellows in the mass, supported the six-fold claim. In these circumstances it certainly seems to us that it is on the regulations that we should keep our attention fixed, for here it is still within the power of a strong and united profession to effect much, and here it is that we can turn from criticism to construction. The resolution not to work under the Act unless these regulations are satisfactory will, in the first case, help the framing of workable regulations, and may, in the second case, lead to the introduction into them of a flexibility which in the present position seems to us necessary. For the Act provides *sickness* benefits and *medical* benefits; and while the former can be paid for in coin of the realm from the same mint, the latter has to be supplied by a service that must be rendered in different places under different conditions. Medical men are one in their aims and one in their training to this extent, that all the medical education of this country is a highly standardised and expensive affair; but while, so far, we are homogeneous, our material interests in the practice of our profession lie in many opposite and sometimes conflicting directions. With a repetition that may be becoming tedious, we must point out that the great fault of the National Insurance Act is the way in which the medical profession, honoured with little attempt at consultation and imperfectly understood in so many ways, has been arbitrarily treated as a section of the community whose methods of gaining a livelihood, being all of one pattern, can at a moment's notice be turned upside down in order to conform to another pattern, without injustice to anyone. We are quite willing to grant that in such a general dislocation of affairs some medical men may benefit in their pockets, and it is possible that some may gain a certain security in their methods of livelihood; but against this must be put the certain fact that many others will be dire sufferers. No regulations of the Commissioners, so far as we can see, can possibly set aright all the wrong that will be done, but undoubtedly the way in which they are framed will prove of enormous importance.

Failing, then, the promotion of a new measure, which

indeed, we find to be a too sanguine expectation, the medical profession will have to bring all its energies to bear upon the securing of proper regulations. And we are perfectly confident that the more a stand is taken upon a professional basis and the less the methods of the trades union are employed, the better will be the result. Already there is much to warrant the belief that this Act, though it is not now treated by its parents as a provisional measure, is none the less regarded by them as open to criticism, indeed as having imperfections to be removed. The Chancellor of the Exchequer has declined to give any pledge with regard to such amendment, but Sir JOHN SIMON, the Solicitor-General, introducing Mr. ORME CLARKE'S exposition of the Act, which we review elsewhere, speaks of amendment as quite certain. The profession would welcome now the intervention of the great medical corporations as guides to a constructive policy.

Imagination in Medical Research.

THE great surgical philosopher of the first two-thirds of the nineteenth century, in the course of a presidential address to the Royal Society, described imagination as the faculty which, "properly controlled by experience and reflection, becomes the noblest attribute of man; the source of poetic genius, the instrument of discovery in science, without which NEWTON would never have invented fluxions, nor DAVY have decomposed the earths and alkalies, nor would COLUMBUS have found another continent." He could not have uttered such words without making a mental application of them alike to the science and art to which his own life was mainly devoted, and also to the kindred pursuits of the physician; and, indeed, it is manifest that imagination, as the parent of hypotheses explanatory of observed phenomena, and themselves capable of being brought to the test of experiment, is the ultimate source of all useful knowledge of the facts of life. Many of us have heard of the two students who reported upon the same patient in competition for a clinical prize. The patient presented, among other symptoms, a remarkable discoloration of a certain area of skin, and the first student described this discoloration with the most careful minuteness. He measured it in different directions and drew a rough sketch of its general outline. The second observed the phenomenon with equal care, but he exercised his imagination and formed a hypothesis which he proceeded to bring to the test of experiment. He asked a nurse for a wet towel, with which he wiped the discoloration away. It is evident that the faculty which he thus brought to bear upon the problem before him would be likely to stand him in good stead in relation to many others of a more complicated character; and that his exercise of the art of diagnosis would be practically immune from the errors incidental to the habit of taking all appearances at their face value. Imagination at once points to the possibility of more than one explanation of any given occurrence, or alleged occurrence, and compels inquiry as to the existence of probable causes beyond the particular one which may at first sight appear to have been in operation. But, as BRODIE said, it must be properly controlled by experience and reflection, lest it should become a source of error by inducing the acceptance of hasty and ill-considered suggestions. When the new Insurance Act comes into practical application, whatever the terms accepted by the medical men may be, those who serve under it will find ample scope for imagination in their endeavours to keep abreast of what may otherwise become a very science of malingering.

In dealing with medical and surgical problems generally, or as they affect communities rather than individuals, imagination must always be the initial factor in the conduct of research, and the chief signpost on the road towards discovery. To take the most important and most conspicuous of modern examples, it was imagination that first pointed to the mosquito as an agent in the conveyance of disease to man. Dr. (now Sir) PATRICK MANSON was in practice at Amoy, and his attention was called to the occasional presence in the blood of the natives of the minute larval filaria which had been discovered by BANCROFT and called after his name. This was seen under the microscope as a motile thread about 0·3 mm. in length by 0·008 mm. in diameter, completely inclosed within a capsule, and present in the blood in millions, but occasioning no apparent symptoms. Dr. MANSON employed Chinese hospital assistants to obtain blood-smears from as many natives as possible in order to ascertain the degree of frequency of the creature among the population. One of his blood collectors was greatly more successful in obtaining the filariæ than others, and inquiry showed that his specimens of blood were taken chiefly in the evening. Further inquiry showed that the filariæ swarmed in the evening in the blood of the superficial vessels of those of their bearers who worked by day and rested at night, and that they swarmed in the morning in the superficial blood of those who reversed this process, such as watchmen and other followers of night industries. A post-mortem examination of a day worker who died suddenly in the morning showed the lungs, the heart and great vessels to contain millions of filariæ, while the superficial vessels were free from them; so that their usually nocturnal migration to the surface was presumably due to changes produced in the blood by fatigue. Why should this migration occur? Dr. MANSON brought his imagination to bear upon the problem, and it suggested to him that the filariæ were parasites requiring the intervention of a second host in order to enable them to reach their next phase of existence, and that their nocturnal migration pointed to this host as being a nocturnal creature of blood-sucking habits. Among such the mosquito presented itself for inquiry, and a Chinaman infested by filariæ was hired to spend a night with a selected company of the insects. In the morning they were captured, gorged with his blood, and by dissections conducted on successive days the filariæ were seen to pass through the next stages of their existence in the muscles of the insect, and to return to the extremity of the sheath of its proboscis, ready to be deposited upon the surface of the next human victim in the immediate vicinity of the puncture, and to make their way through the skin to his lymphatics prepared to undergo complete development into nematoid worms

and to propagate their kind. So far all that was done was to elucidate the growth of the parasites which produce lymphatic varicosities and elephantiasis; but shortly afterwards LAVERAN discovered the parasite of malaria. Dr. MANSON'S imagination at once took fire, and he pointed out that, in all probability, a mosquito was the instrument of its conveyance to mankind. Unable to pursue the investigation himself, he explained his views to Major (now Sir) RONALD ROSS, to whom he also imparted the technique of mosquito dissection which he had himself employed, and who, after much patient and laborious research, was able three years later to confirm what Dr. MANSON had suggested, and thus to establish on a sure basis a discovery which will ultimately lead to the extirpation of a large group of serious or fatal diseases, and may rank with the discovery of anæsthetics or of aseptic surgery.

And, even when we approach the subject of prognosis, the chastened play of the imagination among possibilities should rather be encouraged than restrained. We need its help in order to picture to ourselves the infinite and never-ending struggle between the invading sources of disease and the several "antibodies" which the blood provides for their destruction and the provision of which may be augmented by resources of which medicine is only now beginning to avail herself. We manifestly need its help more when we attempt, by such resources as the microscope and the laboratory will afford, to forecast the issue of the struggle in the case of an individual, or still more, in the case of a disease which has only comparatively lately been brought within the sphere of scientific observation, such as the epidemic poliomyelitis which has recently affected children in many parts of Europe and of America. We have not only to identify the assailants where this is possible, but also to use the ordered play of the imagination in our efforts to establish firmly the lines of defence, and to provide the garrison by which they must be occupied. We have to guard both ourselves and the patients who confide in us against what has been described by an illustrious man as "the bane of half-knowledge," and we can only do this by fearlessly carrying exploration to its farthest possible limits, and by taking account of every circumstance which may affect the accuracy of our forecasts, whether they relate to individuals or to communities. For work of this description the imagination is the motive force of the intellect; and, without the impulse which it affords, our progress would at the best be slow and uncertain, even if it were not altogether arrested. The one thing necessary for its safe employment is that the philosopher should not be too much enamoured of the pictures which it supplies, and should be equally prepared to accept or to reject them as the results of experimentation may require. In other words, he should "love truth better than his system," while recognising that, without a system, his prospects of attaining a knowledge of truth would be very sensibly diminished. JENNER once wrote to JOHN HUNTER that he "thought" so-and-so, and HUNTER replied, "Don't think, try." It would, perhaps, be presumptuous to describe the advice as "bad," but at the best it was, at least, incomplete. Without "thought" there is no room for "trial," and no one knew this better than a finished experimenter like HUNTER. What he meant was clearly, "Don't rest at thinking. Pass your thoughts through the filter of experiment and accept only what the filter retains." In other words, exercise your imagination to the full, but be careful afterwards to correct and to control its operations.

State and Voluntary Sanitary Control of Workshops.

UNWHOLESOME dwellings are the greatest drawbacks to the industrial communities of all nations, but second only to them in sinister influence come unwholesome workshops. There is a formidable array of special trade diseases which can only be checked by the anxious supervision of the premises wherein the trade is pursued, and to this list there must be added ordinary diseases which are accelerated or rendered more frequent or more fatal by the insanitary condition of the factory. In spite of the many statistics published we do not know the full extent of the mischief done by keeping men and women at work in unsuitable premises. Some of the States in America are making notable efforts to thoroughly elucidate the subject, and what is being done is worthy of note, even though we cannot all agree of its practicability. The State of Wisconsin has enacted a law requiring medical practitioners to report to the Board of Health all cases of poisoning due to mercury, lead, arsenic, and phosphorus contracted through the patient's occupation. Cases of illness arising from work done in compressed air, caisson work, and so on, must be notified. Blank forms are sent to all the practitioners so that the reports made may be uniform. The name, address, the place of employment, and nature of the disease have to be inscribed on these forms. The State of Michigan, facing Wisconsin but on the eastern side of the great lake, has a similar law. All medical practitioners in this State are compelled to notify to the State Board of Health every case of disease caused by the work on which the patient is engaged. The name and address must be given, the length of time the patient has been employed, and the duration of the disease. All this information will in the final stage be remitted to the Commissioner of Labour and presumably will be used as a basis for further legislation. Such notification of certain industrial diseases resembles the factory enactments in this country of 1895 and 1901, while the suggestion of a wider notification to include all industrial diseases hardly seems to us workable from the practitioner's point of view—at any rate, as yet. Under our present legislation certain maladies are scheduled as *primâ facie* due to certain employments, but it is always a controversial question, for judicial decision if need be, how far the disease is due to employment and how far to outside conditions. To make the practitioner the referee on such points is to place upon him a very heavy responsibility.

While Michigan and Wisconsin are thus taking steps to extend the scope of legal interference in defence of the health of the workman, a move in the State of New York towards using voluntary organised efforts

to the same end should be noted. A considerable number of employers and employees have agreed to form "a Joint Board of Sanitary Control of the Cloak, Suit, and Skirt Industry of New York City." The idea is to define a standard of sanitary conditions to be established and maintained in all the workshops. Both the employers and the workpeople have pledged themselves not to work in cellars or workshops in the rear of houses or attics unless, after examination of the methods of lighting and ventilation, special permission is given. Then the rules accepted give very full details in regard to outside fire ladders and the various means of fire escape, the provision of automatic sprinklers and chemical extinguishers. Special caretakers must be appointed to see that the fire buckets are always full of water, that no doors are locked during work hours, and that no one smokes in the workshops. The ways of exit must be very clearly indicated and the stairs safe to tread, of easy access, and well illuminated. Every workshop must have a large window-space, so that no part shall need artificial light during the daytime. When, in winter, artificial light must be used, incandescent mantles are recommended. The lights must be shaded and placed above and not too near the workers. At least 400 cubic feet of space shall be provided for each worker, and large pieces of furniture or materials must not be included in this space. Before and after the work hours and during the lunch hour all the doors and windows must be opened to give the premises a thorough airing. All floors are to be scrubbed once a week. Separate lavatories for each sex have to be provided, kept clean, well lighted and ventilated. A lunch-room, a dressing-room, and suitable contrivances to hang up the clothes worn in the streets have likewise to be placed at the disposal of the workpeople. It is only when all these rules have been satisfactorily applied that a sanitary certificate is granted by the Joint Board of Sanitary Control.

The success of such a movement must largely depend upon the public. The public-spirited employers who have consented to hamper themselves with all these restrictions, which must add considerably to their working expenses, expect some recognition at the hands of the public. They hope that the purchaser will inquire whether the clothes he proposes to wear have been made up in a workshop that has received the sanitary certificate. If this is done the movement will be of great use to the purchasers and the producers, but if the former will not give themselves the trouble to look after their own interests they cannot expect that tradesmen will long continue to make sacrifices on their behalf. If the "tentative" move on the part of a certain section of a certain industry in New York should be widely taken up great good will follow, but our experience in this country is not very hopeful. There is with us very little pressure of the practical and moral kind that is hoped for, exercised by the purchasers over the manufacturers—even the demand for leadless glazes has been fitful, we believe. Our Home Office is trying earnestly, and for that matter successfully, to get employers and workmen to agree upon structural and other precautions to be observed under the various Acts, and a long and growing list of regulations gives yearly more protection to those engaged in processes which are clearly dangerous. That there should be behind the State in such matters the steady support, not only of public opinion, but public action, is devoutly to be desired.

Annotations.

"Ne quid nimis."

THE EPIDEMIOLOGY OF ACUTE POLIOMYELITIS.

THE occurrence of large epidemics of poliomyelitis in Northern Europe and in America and of small outbreaks in various parts of this country, as well as the discovery of important facts in regard to the causation and spread of the disease, have enormously increased the interest taken in this subject. We have on several recent occasions commented upon various publications on the disease and upon the administrative measures suggested to combat its incidence and spread. In a disease of epidemic nature occurring in children it is natural to inquire what part, if any, is played by schools in its spread. This question is discussed in an interesting and critical manner in a paper read before the Medical Officers of Schools Association on Nov. 8th, 1911, by Dr. Frederick E. Batten,[1] whose researches upon the nature of this disease are well known. Dr. Batten first reviewed the clinical varieties of the disease and the history of the discovery of the virus. He stated that the virus will not grow on any of the ordinary media, and that it has not yet been stained or seen under the highest power of the microscope. It can be shown to be present in the mucous membrane of the nose and in the salivary glands of an infected monkey. It has only been found possible to transmit the disease to monkeys of all the animals which have been inoculated with it; and whether introduced by the brain, the peritoneum, or by intravascular, intraneural, or subcutaneous injection, the disease became established in the spinal cord. The exact period of incubation is as yet uncertain, but in 65 out of 81 monkeys it was under 12 days. The clinical evidence seems to suggest that it is less than six days. The infectivity of the disease appears to be not very great, the proportion of persons exposed to infection who develop the disease being 6 per cent., whereas with scarlet fever and diphtheria it is 22 and 17 per cent. respectively. Dr. Batten, in reviewing the evidence in favour of the spread of infection by schools, described the observations of Wickman in the Swedish epidemic. This observer found that the disease tends to travel along the railways and great thoroughfares, and he cited four instances where there was evidence that the disease was spread by schools. The evidence with Wickman's tables is carefully presented by Dr. Batten. The most important epidemic investigated from this point of view was that at Trästena, a small community of 500 inhabitants, consisting of 132 families living in 102 houses. In rapid succession 49 people were taken ill, the majority being children, and of the 49 cases 26 were paralysed. The relation of these cases to attendance at school is shown in a simple manner by a diagram. Dr. Batten concluded that there is no doubt that the virus was transmitted from person to person and that it was often carried by an intermediate person who was not suffering from the disease. It is also clear that this epidemic was not carried by water or by milk. Other outbreaks in Sweden, Berkshire County, N.Y., and Westmorland are also considered in similar fashion. Dr. Batten next reviewed the evidence against school infection, which is, in brief, that 75 per cent. of the

[1] Medical Officers of Schools Association. Poliomyelitis in Relation to the Spread of Infection by Schools. By Frederick E. Batten, M.A., M.D. Camb., F.R.C.P. Lond. London: J. and A. Churchill. 1911. Pp. 16. Price 1s. net.

cases occur before the age of four years—i.e., before the school age, that it is very rare for the disease to occur in an epidemic form in institutions, and, further, that in hospitals where cases of poliomyelitis are admitted the disease has never been known to spread. Dr. Batten summed up by expressing the opinion that the evidence in favour of the spread of infection by schools is not conclusive, but that it is a possibility which should be borne in mind. He advised that all contacts should be submitted to a period of 14 days' quarantine before returning to school. In infected cases he suggested that they should not return to school until at least a month after the onset of the illness, and only then if convalescence is complete and there is no discharge from the nose. In severe cases the resultant paralysis by itself prevents a return to school for months. We have also received a copy of a report presented to the Health Committee of the City of Carlisle by Mr. Joseph Beard, medical officer of health, upon an epidemic of the disease which occurred in the late summer and early autumn of 1910. There were 38 cases, with seven deaths. At an early period, on the recommendation of Mr. Beard, the Health Committee adopted a system of voluntary notification, which received the sympathy and coöperation of the local practitioners, with the result that useful information was obtained. Mr. Beard strongly urges the importance of universal notification of this disease.

HYGIENE AND THE TUBE BOOKING-CLERK.

IN the scales of legal justice the question of intent or wilfulness is commonly allowed its full weight either for or against the offender, so that, for example, a man charged with inflicting bodily hurt can, if he proves the inadvertence of his act, rely on the leniency of the court. In breaches against the public health, on the other hand, this plea is less satisfying, and rightly so, otherwise the careless householder, for instance, whose insanitary manners have spread an epidemic of infectious disease among his neighbours, might escape the pecuniary responsibility for his sins. Often, moreover, the effects of a dangerously unhygienic act, itself entirely inadvertent, can, if traceable to their origin at all, be linked up to it only with much difficulty, at any rate by a chain of legal proof. Thus a parent may innocently allow his child, while still desquamating from scarlet fever, to attend a gathering of other children many of whom are as susceptible to the disease as straw to a match. As with individuals, so with commercial enterprises. Every year in the London tube railways millions of the public avail themselves of the comforts and conveniences of subterranean travel. Each of these passengers, each time he goes by tube, receives a ticket handed to him by a booking-clerk, whose movements, hidden behind his pigeon-hole, are in most instances not noticed, perhaps not even seen. To the observant, however, the habits of the booking-clerk are of no little hygienic interest. At a first glance it would seem that on the receipt of the appropriate fare he immediately tenders a ticket to the purchaser who carries it in his hand to the liftman to be punched, and then places it safely in his pocket. Looked at more closely, however, the incident gains in significance. It may now be noticed that the clerk, when addressed by the passenger, first inserts one finger (sometimes two) into his mouth, for all the world as though he had burnt his hand, then, withdrawing it rapidly, tenders the requisite ticket. This ticket, now wet with the clerk's saliva, is picked up by the passenger, to whose fingers a portion of the moisture may adhere, is grasped by the ticketman at the lift, whose fingers may also receive a portion, and is finally conveyed to the passenger's pocket, under the warmth of which the remaining portion evaporates, leaving the residual particles to rub against the dark recesses of the lining. This sequence of events, of course, is subject to alteration. The booking-clerk is only human and sometimes he forgets to lick his fingers. Sometimes his occupation is taken from him by an automatic ticket machine or by the system of "strip-tickets"; but often—very often—the passenger, in return for his pence, may find that he is bearing away on his ticket a generous quantity of the booking-clerk's saliva. It may at once be granted that, in all probability, not many of these clerks are consumptive or are infected with any contagious disease. The practice is insanitary. If, as may be the case, it is the outcome of the contrivance by which the tickets are kept ready to hand in the booking-office, and by which an unmoistened finger is placed at a mechanical disadvantage, the difficulty might be met by a damping-pad beside each pigeon-hole. Certainly a progressive and enlightened railway company that not only provides its weary passengers with ozonised air, but exhorts them by public notice and under penalty not to spit, will hardly be backward in putting an end to this gratuitous distribution of their employees' saliva.

ACUTE PHLEGMONOUS GASTRITIS WITH ERYSIPELAS.

ACUTE phlegmonous gastritis is very rare and the number of cases which have been investigated bacteriologically is limited. The organism which has been most often found is the streptococcus, but Mr. J. E. Adams has reported in our columns a case due to the pneumococcus.[1] As erysipelas is due to a streptococcus, the suggestion has been made that phlegmonous gastritis is "erysipelas of the stomach." In the *American Journal of the Medical Sciences* for November last Dr. W. S. Baird has reported a case from the Pathological Laboratory of the Montreal General Hospital in which erysipelas, as well as general infection with the streptococcus, was present. A man, aged 30 years, was admitted on April 26th, 1910, complaining of dyspnœa, swelling of the legs, and vomiting. The pulse was 136, irregular, and of small volume. The heart was enlarged, and an apical systolic murmur transmitted to the axilla was present. There were œdema of the legs and thighs and tenderness over the epigastrium. The tongue was coated, and as soon as food was taken it was vomited. The liver was palpable, but the patient stated that he took only one or two glasses of beer or whisky daily. He was discharged improved on May 14th, but he relapsed and was readmitted on June 9th. In addition to the previous symptoms there was evidence of right pleural effusion, and the abdomen was prominent but not tender or dull in the flanks. The œdema disappeared, but he did not improve, and suffered from pain in the epigastrium and præcordium. Severe hiccough and vomiting developed. On June 16th erysipelas began on the nose and soon spread over the cheeks. The temperature was elevated and the præcordial pain and dyspnœa increased. Delirium followed, and the epigastrium became acutely tender. On June 19th he became much worse and complained of acute sudden pain in the epigastrium; the dyspnœa became much more severe, the pulse failed, and he died. At the necropsy the peritoneum was found covered with a viscid exudate and deeply congested. In the recesses and pelvis were over 300 c.c. of thick, yellowish fluid, smears from which showed Gram-positive cocci in chains. The stomach was greatly distended and dark bluish-red. The right pleura was deeply congested and contained 300 c.c. of turbid yellow fluid, smears from which showed Gram-positive cocci in chains. The heart weighed 500 grammes and was much dilated. Shining through the epicardium of the left ventricle were two round, elevated, light yellow œdematous areas, about 1 centimetre

[1] THE LANCET, Jan. 29th, 1910, p. 292.

in diameter, smears from which showed Gram-positive cocci. The stomach contained thin, yellowish turbid liquid. The mucosa was deep red and velvety in appearance, and was covered with a thin tenacious layer of yellowish mucoid material. The gastric wall for a distance of 15 to 18 centimetres from the œsophageal orifice varied in thickness from 4 to 8 millimetres. This was due to infiltration of the submucosa, which on section exuded drops of thin, yellowish pus. Smears from this showed leucocytes and chains of Gram-positive cocci. Other lesions found were central necrosis of the liver, septic spleen, cellulitis of the left crus of the diaphragm, fat necrosis about the cardia of the stomach, congestion and infarction of the lungs. Cultures from the heart's blood and the walls of the stomach yielded streptococcus pyogenes. Phlegmonous gastritis may be secondary to lesions of the stomach or an acute infection elsewhere in the body, or be part of a general septicæmia. It is often difficult or impossible to determine the primary lesion. In the present case it seemed that the erysipelas was primary and that the other lesions were part of a general septicæmia.

THE HEALTH OF PROFESSOR TRENDELENBURG.

WE publish in another column the oration delivered before the Hunterian Society last week by Mr. C. A. Ballance. In the course of his oration he describes the wonderful operation performed by Professor Trendelenburg in a case of pulmonary embolism, and has since received a letter from Professor Trendelenburg which will be of interest to our readers as telling the early history of the operation for pulmonary embolism. The following is an abstract of the letter, which is dated Jan. 11th, 1912: "I have hitherto had no success with the operation for pulmonary embolism, and must now leave it to others to bring about the first success, for I have been obliged to resign my office on account of ill-health. I have not hitherto published my experiences lest I should discourage others from undertaking what is certainly a rational operation. I am, however, very pleased to communicate to you my cases. The two already published you know about. To them should be added ten cases which have subsequently been operated on in my clinic mostly by my assistants, and of which I give you a list. In all death followed shortly after the operation, which in most was undertaken too late. The two cases already mentioned and that of Krüger in which death did not occur till some days after the operation from suppurative pleurisy, are, up to the present, the most successful. In every case we are convinced that the operation was fairly simple and in favourable circumstances, which, however, can but seldom occur, ought to succeed. It has been stated that the diagnosis of embolism is too difficult and uncertain. This is not the case when we have to do with surgical patients suffering from fractures, operation cases, and so forth, who were previously sound. In all our cases of this nature the emboli in the pulmonary artery were found. We only failed to find the embolus in one case which was sent to me from the medical side moribund, with the diagnosis of pulmonary embolus. I have not included this case in my list. In doubtful cases and in cases of embolus or thrombosis without severe symptoms, we have been accustomed to bring the patients into the operation theatre and to wait. In two such cases the symptoms of embolism subsided and recovery followed. In seven cases the course was so rapid that no question of an operation could arise. After these experiences I believe that in spite of the failure that has hitherto attended it the operation for pulmonary embolism has a future. The resolution to operate has not been in most cases taken sufficiently promptly, and perhaps also improvement in the technique is required." All British surgeons will learn with the deepest sympathy and regret of the illness of Professor Trendelenburg, whose name is so well known and honoured in every surgical clinic. The operation for pulmonary thrombosis is not the only advance in the surgery of the venous system which we owe to him. The brilliantly successful results which have followed ligation of the ovarian veins in puerperal septicæmia will ever be associated with his name. After 45 years of strenuous hospital work it is to be hoped that this noble life will long be preserved to contribute further to the science if not the art of surgery.

A MEDICAL MAN'S BEQUEST.

THE late Dr. Charles Alfred Lee, the senior medical practitioner of Hull, who died, unmarried, on Jan. 13th, has left by his will £155,000 for charitable purposes. The greater part of this munificent bequest is to be devoted to the building and endowment of almshouses for the city of Hull. Throughout his long life Dr. Lee was a generous supporter of local charities, and one of the wards in the Hull Royal Infirmary, as well as a home for sailors' orphans, bear his name. The scheme for the erection of almshouses, which is outlined in the *Eastern Morning News*, is on a very large and comprehensive scale; and one of the last acts of the donor's life was to sign the deed of conveyance of the 4¼ acres chosen by him to be the site of his foundation. The project interested him deeply, and his will gives clear directions for the equipment and maintenance of the institution and for the selection of its inmates. "Lee's Rest Houses," when completed, will stand as a lasting memorial to the charity and public spirit of a medical practitioner.

THE ETIOLOGY OF YELLOW FEVER.

A USEFUL purpose is sometimes served by "taking stock" of the state of our knowledge of a particular disease, and by passing in review the evidence upon which our opinions regarding it have been based. A recent instance of the value of this "stock-taking" is furnished by Dr. Harald Seidelin, the editor of the *Yellow Fever Bureau Bulletin*, who has contributed to the November number of that journal a very thoughtful and suggestive article in which he discusses the evidence upon which the modern etiology of yellow fever is based. He is well qualified for the task seeing that he has had both personal and practical acquaintance with the disease in one of its endemic areas, and has been for some years engaged in scientific research in regard to it. Though apparently a firm believer in the modern doctrine which ascribes the spread of the malady to the agency of a species of mosquito, Dr. Seidelin does not hesitate to criticise freely the evidence which has been adduced in its support, and to indicate the lines on which further investigation ought to proceed. The view that yellow fever infection is conveyed to man by the bites of the stegomyia fasciata is based mainly upon experiments carried out by Reed, Carroll, and Agramonte of the United States Commission more than ten years ago. It is now suggested that these experiments were not conducted altogether under ideal conditions, and that therefore they do not afford absolute and conclusive proofs; Dr. Seidelin contends that the transmission of yellow fever by means of the S. fasciata has not been proved beyond doubt on strict scientific principles in the way that the transmission of malaria by the anophelines has been demonstrated. It is, however, admitted that the arguments adduced in support of the theory are very strong, and that for practical purposes they may after all be accepted. Corroboration, moreover, is found in the fact that prophylactic anti-mosquito measures based

upon the theory have succeeded, when efficiently enforced, in causing the disappearance of the disease in places which were formerly much afflicted by it, as, for instance, at Habana and Rio de Janeiro, where previously other prophylactic methods had been found utterly futile. Other points associated with the modern etiology of yellow fever are also discussed by Dr. Seidelin, and he indicates that although the inferences already drawn regarding them may be perfectly correct, yet the evidence adduced in their support has been quite insufficient. Further confirmation is therefore very desirable before these points can be finally accepted. It has never been shown, for example, that the S. fasciata is the *only* species of mosquito capable of infecting man with yellow fever. Neither has it been definitely proved that the yellow fever parasite undergoes an evolution of 12 days' duration in the body of the stegomyia; nor can it be considered as conclusively demonstrated that the blood of the yellow fever patient is infective only during the first three days of the illness; much less can it be concluded that the yellow fever parasite must be absent from the blood after the expiry of that short period. The proofs of some at least of these points would probably not be very difficult to obtain if further experiments devised for this purpose were carried out by responsible investigators. As these points are of some importance, it is extremely desirable that such experiments should be undertaken without unnecessary delay. The fact that the specific organism of yellow fever has not been satisfactorily isolated has hitherto somewhat hindered arrival at final conclusions. There are now, however, grounds for believing that the disease is caused by a protozoal parasite, the principal forms of which have been discovered and described by Dr. Seidelin, who has found them present in the blood or tissues of about 90 per cent. of the yellow fever cases investigated by him. If these observations are confirmed by other experts a very notable advance will have been made towards the microscopical detection of the disease and the settling of many disputes as to what is, and what is not, true yellow fever, a matter often of great administrative importance. The forms of the parasite found by Dr. Seidelin have hitherto been termed "yellow fever bodies," but he now proposes to call this parasite the Paraplasma flavigenum, and he thinks it probable that it belongs to the family Babesiidæ. It is quite possible that yellow fever may not be exactly the same disease in all the places where its presence is reported; and this might be explained upon the supposition that various forms of paraplasma exist, just as there are varying types of malaria caused by different species of plasmodia. It is possible, therefore, that in the future we may have to consider different varieties of paraplasmosis in the same way that we speak of different babesioses and trypanoses. Our readers are doubtless aware that there is no recognised pathognomonic sign of yellow fever, so that at present it is often impossible to settle definitely the diagnosis of the disease. But assuming that the parasite discovered by Dr. Seidelin is the true cause of yellow fever, there would now seem to be some prospect at last of microscopical confirmation of the diagnosis being obtainable. It is admitted that these "yellow fever bodies" are commonly present in small numbers in the blood of the patients and that they may be very difficult to find unless much time is spent in searching for them. The detection of these "bodies," moreover, requires the employment of the best possible microscopic outfit. Thus it will be seen that there are still some difficulties to be surmounted before we can secure microscopical confirmation of the diagnosis of yellow fever; but further study of the subject may in time evolve an easier method of finding the specific parasite. Though Dr. Seidelin believes that the paraplasma flavigenum is the organism which causes yellow fever, he does not deny that some evidence has been brought forward connecting Sanarelli's bacillus icteroides with the disease, and he is disposed to adopt the view of Dr. J. Guiteras, who has attributed to this bacillus, along with others, responsibility for the hæmorrhagic phenomena met with in attacks of yellow fever. If this should be the case, these phenomena would have to be looked upon as complications only, and not as actual symptoms of the disease. In order that further investigations which are so much needed may be carried out at once the Yellow Fever Bureau has despatched Dr. Seidelin to Merida in Mexico, where an outbreak of yellow fever has recently occurred. If suitable opportunities are afforded to this investigator in pursuance of his inquiries we have no doubt that he will succeed in clearing up much that is at present doubtful, and at the same time obtain the further evidence which appears to be required to place the modern etiology of yellow fever beyond all dispute.

DRUG ARCHITECTURE AND THE ORGANISM.

THE chemistry of synthetic drugs is a subject of rapidly increasing importance, and the modern aspects of it are well presented in a recent volume that has reached us[1] The writer sets out a very interesting sequence of events. The question of the relationship of physiological action to chemical constitution has, of course, received considerable impetus since the introduction of synthetic remedies. The ionic theory also has advanced very considerably our knowledge of the physiological action of drugs. Pharmacology, therefore, far from being as in bygone years an empirical collection of recipes hardly deserving the name of a science, has stepped into the region of exact study. Not only are we adding every day to our means of isolating the active principles of a drug upon which certain physiological effects depend, but we are gradually becoming able to map out the constitution of these principles and to separate them into architectural groups, each possessing a significance of its own, positive or negative in character, as the case may be. It is conceivable that in the treatment of disease by drugs the time may come when structure and the pharmacology of a drug may be so well correlated as to render the practice of prescribing entirely free from empiricism. A consummation of the kind is foreshadowed in the examples given by Mr. May in his very interesting book; but against all attempts to reduce pharmacology to an exact science must be reckoned the extraordinary complication of the human machine and the consideration, further, that there are influences acting upon it which are sometimes psychological. It is doubtful whether idiosyncrasy will be brought under control by the most intimate knowledge of chemical constitution, though that reflection will not deter us from attempting to set up a pharmacological system of cause and effect. When we read in Mr. May's book paragraphs such as the following, it is obvious that the ground is being cleared in the direction indicated: "The influence of the chemical constitution of a substance on its physiological effect can be seen from the fact that definite changes in the chemical constitution of substances belonging to the same class, are usually accompanied by definite changes in the physiological effect, and, further, that the addition of certain molecular groups to differently acting substances can change them into similarly acting or equally inactive bodies." Again, "Morphine has a strong hypnotic effect, and the anchoring group is probably one of the hydroxyl groups. If these are combined with sulphuric

[1] The Chemistry of Synthetic Drugs, by Percy May, B.Sc.Lond., London, Longmans, Green, and Co., 1911, pp. 222, price 7*s.* 6*d.* net.

acid, then the morphine cannot be 'anchored' to the nerve tissues of the central nervous system and the resulting substance has no effect at all. If the hydroxyl is only altered by the entrance of an organic radicle, with the formation of substances such as methyl, ethyl, or acetyl derivatives, then the hypnotic effect is thrust into the background, while the action of the respiratory centres, produced by morphine to a slight extent, becomes much enhanced and dominates the physiological effect (codein, heroin, &c.)." As another example we may quote the following: "In many cases physiologically active compounds show a degradation of the molecule, and these same substances, if they are made so resistant that they no longer suffer any alteration in the organism, then become inactive. For example, xanthine has no tonic action on the heart muscle, but theobromine (dimethyl-xanthine) has a slight tonic action and caffeine (trimethyl-xanthine) has a still more marked tonic action, from which it will be seen that the addition of methyl groups to the nitrogen of xanthine adds a special action on the heart to the ordinary physiological action of xanthine." Mr. May's book is most interesting and suggestive, and the person who reads it carefully will not be left wondering why it is that of synthetic remedies there is no end.

THE DARK AND DAMP DAY.

HUMAN activity undoubtedly receives a check under the dispiriting conditions of the weather which has characterised the British Isles for the last week or so. The absence of direct sunlight is bad enough, but there has been also a dampness in the atmosphere which tends to interfere with the healthy functions of the skin. Normal transpiration is hindered when the air is saturated with moisture. Instead of passing away, perspired products remain as a stickiness which clogs the skin. When it is remembered that the amount of vapour passing from the skin in dry air at normal temperature may amount to 30 ounces per day, while in moist air the amount so transpired may only be from 7 to 8 ounces, it is clear that an important function is considerably hampered by excessive humid conditions. It is well known that human sweat has toxic properties, so that it is not surprising that under these meteorological conditions the vitality gets low and common ailments are prevalent. Amongst these, obscure muscular pains and chronic rheumatism are very generally complained of. The indication is in favour of increasing the application of warm water to the body so as to remove skin exhalations and compensate for the restraint put upon the skin by the continued presence of a humid air. It is, at any rate, a consolation that the absence of the feeling of well-being experienced under the present meteorological conditions is no sign of constitutional ill-health; it is a local disturbance set up by an external physical condition which arrests freedom of action. It is to be hoped that the source of this depression and disturbance, the damp and darkness of the present season, will ere long pass away.

THE ROYAL SANITARY INSTITUTE.

THE fifty-third course of lectures and demonstrations for sanitary officers will be given from January to April at the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W. The course will begin on Monday, Jan. 29th, and will be continued on successive Mondays, Wednesdays, and Fridays till April 19th, at 7 P.M. The fee for the complete course of 33 lectures will be £3 3*s*., or for the first part of the course, consisting of 26 lectures on elementary physics and chemistry, public health statutes, the duties of sanitary inspectors, and municipal hygiene, £2 12*s*. 6*d*. The fee for the second part, dealing with food inspection and analysis, is £1 1*s*. Among the lecturers are the names of Dr. G. F. McCleary, Dr. Charles Porter, and Dr. E. Petronell Manby. The demonstrations include visits to municipal buildings and works, factories and dairy-farms, the Metropolitan Cattle Market, and a knacker's yard. In order to assist school teachers and other students entering for examinations in hygiene in its bearings on school life, and to help women health visitors and school nurses, a course of lectures will commence on Feb. 16th at 7 P.M. and be continued at the same hour on Mondays and Fridays during February, March, and April. The fee for the course, which includes the privilege of attending certain of the lectures given to sanitary officers, will be £1 1*s*., and the subjects treated include general physiology and personal hygiene, the growth and development of the child, the sanitation of school buildings and dwellings, educational methods, and first aid. Among the lecturers are Dr. A. B. Kingsford, Mr. F. N. K. Menzies, Mr. E. H. T. Nash, Dr. Eric Pritchard, and Mrs. Marion Hunter-Vaughan. Full particulars and forms of application for the examination can be obtained at the offices of the Institute, 90, Buckingham Palace-road, S.W.

SIR THOMAS BROWNE AND THE WITCH-TRIALS: A VINDICATION.

PERHAPS the only place where we meet the name of Sir Thomas Browne without pleasurable associations is in the account of the trial of Amy Duny and Rose Callender for witchcraft before Sir Matthew Hale in 1664. It has frequently been stated, and it is widely believed, that Sir Thomas Browne was responsible for the hanging of these two women. He made a statement in open court which is alleged to have carried great weight with the jury and to have influenced the judge against the prisoners, with the result that they were convicted and hanged. This is the view frequently adopted by writers on the subject. One of Sir Thomas Browne's biographers, Mr. Edmund Gosse, goes so far as to state that the blood of the two women was on his head. It is now suggested in two articles published in the *Norfolk Chronicle* of Dec. 23rd and 30th, 1911, that the facts connected with this trial have been greatly misrepresented, and that the suggestion that Sir Thomas Browne was responsible for the death of these two women is not in accordance with the facts of the case as recorded at the time. Mr. Malcolm Letts in the articles referred to examines the account of this incident as related by Sir Thomas Browne's most recent biographer, and compares it with the contemporary report of the trial (taken in court by the judge's marshal and published in 1682), with interesting results. It is shown that Browne had very little to do with the proceedings. He was present in court, and at an early stage he was appealed to by the judge and thereupon made a statement as to his belief in the reality of witchcraft, an expression of belief in which ninety-nine out of every hundred of his educated contemporaries would have concurred, but there is nothing more against him. It is probable that the witches were convicted on the evidence adduced by the prosecution without reference to Sir Thomas Browne's opinion. We recommend all who are interested in the great Norwich physician to read this vindication.

AT the meeting of the Ninth International Otological Congress, which is to be held in the new buildings of the medical department of Harvard University, in Boston, U.S.A., during the week beginning August 12th, 1912, the distribution of three prizes will be awarded by the International Jury to whom the adjudgment has been committed. These are the Lenval prize, the Adam Politzer prize, and the Cozzolino prize; the two former for the best published work on the anatomy, physiology, and pathology of the organ of

hearing, the latter for the best published work on the anatomy and pathology of the organ of hearing, and upon clinical therapeusis. Candidates for these prizes should communicate with the president of the jury, Professor Dr. Adam Politzer, 19, Gonzagagasse, Vienna, and should send to him the work offered in competition, at least six months before the date of the opening of the next congress. Should a sufficient number of valuable works be presented in competition it is in the power of the jury to divide the Lenval prize and the Politzer prize, thus making five prizes for award.

THE mortality from plague in India from Nov. 25th to Dec. 9th, 1911, averaged about 6800 weekly; about one-third of these deaths were in the Bombay Presidency. The actual figures for the week ending Dec. 9th were 8450 seizures and 6583 deaths. Bombay Presidency returned 2367 deaths; Madras, 284; Bengal, 231; United Provinces, 1360; the Punjab, 106; Burma, 23; Central Provinces, 557; and Mysore State, 347. There were no cases reported in Eastern Bengal and Assam. An increase in the plague mortality is reported for the week ending Dec. 16th, the total number of deaths being 8191 as against 6583 reported in the previous week. The provincial figures are: Bombay, 2509; Madras, 321; Bengal, 415; the United Provinces, 1752; the Punjab, 138; Burma, 31; the Central Provinces, 744; Coorg, 7; Mysore, 398; Hyderabad, 1505; Central India, 349; Rajputana, 22.

SANITARY MEASURES IN INDIA.

A COPY of the annual report on sanitary measures in India for the year 1909–10 (Volume XLIII.) as presented to both Houses of Parliament has reached us. It deals with the health of the European and native troops, of prisoners in jails, and of the general population, also with vaccination, medical institutions, including hospitals, dispensaries, and medical schools, with lunatic asylums, and with sanitation. The latter portion of the Blue-book is made up of an abstract of the report of the Sanitary Commissioner with the Government of India for 1909 which has already been somewhat fully reviewed in THE LANCET.[1]

Those portions of the report which relate to the incidence of sickness and mortality amongst the European and native troops, the prisoners in jails, and the general population, as well as the section on vaccination, call for no further remarks than those made in our previous notices, as no new facts are put forward, these sections of the report being on similar lines to that of the Sanitary Commissioner's report for 1909.[2]

Medical Institutions.

Section VI., dealing with medical institutions, which has been contributed by the Director-General of the Indian Medical Service, presents several interesting particulars connected with the civil hospitals and dispensaries of British India which are either entirely supported by the State or aided by local or private funds. No less than 2638 such institutions existed in 1909, an increase of 60 on the previous year. In every province there is need for more, but the lack of funds prevents a more rapid growth of medical relief. The total expenditure amounted to £781,000, an increase of £93,000 on the previous year; but the subscriptions from Indians only amounted to £40,000. The extent to which hospitals are supported by the inhabitants varies very much in different parts of the country.

In the United Provinces the pay and prospects of the civil hospital assistants have been improved and they are now called sub-assistant surgeons. It is hoped that the numerical shortage in this useful class of subordinates will now disappear. In the North-West Frontier Province difficulty still exists in attracting good assistant surgeons, hospital assistants, and compounders. The number of students belonging to this province who are undergoing medical instruction is stated to be very small, and their pay and prospects will have to be improved.

In the Central Provinces the continued prevalence of plague is said to be keeping patients away from the hospitals and dispensaries. In Madras Presidency female patients resort more freely to the hospitals every year, and the employment of trained midwives for cases of labour in the patients' own homes continues to be very popular. In Bombay Presidency the experiment of sending subordinates out into malarial districts to treat cases in their own villages was tried and will be repeated. In Burma 13 new dispensaries were opened, and there has been a marked rise in the number of cases treated. The new general hospital at Rangoon was opened and is doing good work. It is stated that arrangements have been made for an improvement in the nursing staff at headquarters hospitals and for the training of male nurses.

Lunatic Asylums.

The total number of patients of both sexes under treatment in asylums in British India for the year 1909 was 7378, as compared with 7247 for the preceding year; of these, 5883 were males and 1495 females, and they include 2019 criminal lunatics. In Bengal it is noted that the accommodation is barely adequate and the asylums show a much higher sick-rate than those of any other province. Overcrowding is recorded at Dacca and at Tezpur in the Eastern Bengal and Assam administration. In the Punjab there were increased sickness and mortality chiefly from the result of bowel complaints, the etiology of which is under investigation. The difficulty of obtaining suitable attendants is mentioned and an attempt to remedy this by employing ex-soldiers is being made. In Burma overcrowding is also reported, and extensions to the Rangoon asylum are under consideration. In Bombay Presidency the number of deaths was high—130, as compared with 86 and 67 in the previous two years. This was the result of a severe outbreak of cholera at Thana and a minor one at Poona causing 37 deaths. Madras Presidency shows an increase in the asylum population of 25 per cent. in the past decade. The total expenditure on asylums for all India and Burma for the year amounted to £77,500, of which amount £6200 were derived from paying patients.

Medical Schools and Colleges.

In Bengal, the medical college at Calcutta showed a total expenditure of £18,582, the fees received from students amounting to £3516. The average cost of education of a military student (including maintenance) is £84 and of other students £23. There were 465 male pupils, excluding 85 military pupils, and 16 female. Of these, 56 students passed the final L.M.S. or M.B. examinations, 5 military students received a diploma and entered the service, and 28 pupil nurses and 16 *dhais* (native midwives) obtained certificates. The provision of a hostel for civil students is stated to be an urgent necessity, but funds are not available. In the medical schools there was an increase in the number of students admitted to the Temple and Cuttack, but a decrease at the Campbell; 60 male students passed the final examination and 16 entered Government service. These three medical schools together cost £8411, £877 were received as fees, and 495 male and 26 female students were under instruction during the year.

In the United Provinces 258 male and 71 female students attended the medical school at Agra. Of these, 64 males and 18 females appeared for the final examination, and 46 and 13 respectively qualified. Admission to the civil class is now only open to residents of the United Provinces who hold entrance certificates of Allahabad University. In Eastern Bengal and Assam the number of students in the Berry White School at Dibrugarh and the Dacca School was 319. In Burma the medical school at Rangoon showed 28 pupils, of whom 23 receive stipends from Government. The accommodation is stated to be quite inadequate and instruction is handicapped accordingly; the students are said to be markedly below the average as compared with other schools.

In the Punjab we find that the Lahore Medical College and School showed an average number of students of 180 and 207 respectively, as compared with 204 and 193 in the previous year. The reduction in the case of the college is chiefly due to the elimination of the preliminary science classes. Fifty-four students went up for the final L.M.S. or M.B. examination and 25 passed. At the

[1] THE LANCET, May 13th (p. 1300) and 27th (p. 1446), 1911.
[2] See also THE LANCET, Dec. 2nd (p. 1576) and 9th (p. 1651), 1911.

final qualifying examination of the Lahore Medical School 33 passed out of 35 who competed. In Central India the Indore Medical School had 72 students.

In Madras Presidency the strength of the Medical College is increasing steadily. The students numbered 367; 16 passed the M.B. and 13 the L.M.S. The "refresher" courses for sub-assistant surgeons are working satisfactorily, as also are the special classes for sanitary inspectors. The chemist and druggist department is, however, stated to have proved a failure. The Prince of Wales School at Tanjore had 57 students, Royapuram 144, and Vizagapatam 42, of which 5 out of 8, 26 out of 28, and 4 passed the final examinations respectively.

In Bombay Presidency the Grant Medical College had 518 students; 89 passed the final L.M.S. out of 211 who went up. There were 25 women students. A new hostel, lecture theatre, and pathological laboratory have been opened and a physiological laboratory is under construction. At the Poona School there were 127 pupils, of whom 65 were military; at the Ahmedabad School 135 pupils, of whom 67 were military; and at Hyderabad 51 pupils. More tutors in the anatomy department are stated to be required at Ahmedabad, as the practical training in this subject is considered very defective. At Hyderabad the teaching staff consists of only the superintendent and two assistants.

This *résumé* of the medical colleges and schools of British India and Burma is of particular interest in view of the attention that has been attracted recently to the development of what has been termed the "independent medical profession" in India.

Sanitation.

Section VII. of the report deals with the subject of sanitation in the several presidencies and provinces. In Bengal the sanitary board held three meetings during the year. Among the principal subjects of discussion were the Howrah drainage scheme and the Darjeeling water-supply and sewage scheme. Excluding Calcutta, there were 128 municipalities in Bengal that spent in the aggregate 39·67 per cent. of their income on original and recurring sanitary works compared with 39·51 in 1908. The actual sums expended under the three main sanitary headings—namely, conservancy, water-supply, and drainage—were more than in 1908 by about £16,600. In Calcutta satisfactory progress is reported in the construction of the overhead reservoir at Tallah, the reinforced concrete foundations being completed in October, 1909, at a cost of £27,590. The erection of the large steel structure forming the reservoir itself, which is estimated to cost £91,367, was then commenced, and was in its last stages at the end of the year under report. The municipalities in Eastern Bengal and Assam show an increased expenditure on sanitation of nearly £13,500, due mainly to the extension of the Dacca water-supply. The Sanitary Board afforded much useful advice to Government on the numerous schemes of sanitary improvement submitted to it. A conservancy tramway was completed at Dacca, and handed over to the municipality in December, 1909, and the surface drainage of the new civil station was in progress.

Progress in sanitation in the United Provinces continues to be made, and the Sanitary Board, which met nine times during the course of the year, criticised and approved of projects for improving the sanitary conditions of municipalities at an aggregate estimated cost of over £100,000. The total expenditure incurred on sanitary works under the supervision of the sanitary engineer in 1909–10 was £46,200. In March, 1909, Dr. Gilbert Fowler, of Manchester, visited the United Provinces, and furnished a valuable report on the treatment of sullage.

In the Punjab about £28,300 were spent on water-supplies, £16,700 on drainage, and £52,650 on conservancy, road-clearing and watering, and latrines. The hydro-electric scheme for Simla was in progress, and the intramural drainage of several sections of the city of Amritsar was under construction. A valuable improvement was effected in the water-supply at Delhi by the connexion of the wells with the suction at the intake whereby clear water can be drawn from the wells when the river is in flood. In the North-West Frontier Province improvements were effected in the sanitation of Peshawar and Dera Ismail Khan. The municipalities in the Central Provinces spent 46 per cent. of their income on sanitary works. Improvements in the water-works at Nagpur were in progress, and the extension of the water-supply at Harda at an estimated cost of £80,000 was proceeding.

In Madras Presidency £40,880 were spent on water-supplies, £5747 on drainage, and £63,515 on conservancy, including the upkeep of roads, &c. Designs and plans for new works for the main drainage of Madras city, estimated to cost £107,307, were completed. In Bombay Presidency, excluding the city of Bombay, £126,716 were spent on the improvements of water-supplies, drainage, and conservancy. Estimates amounting to £23,633 and £19,733 for water-supply schemes at Nasik and Hyderabad respectively were sanctioned and the works begun. The Pundharpur water-supply was completed, and the distribution of the water-supply at Karachi was extended and the drainage works of that city continued. In Bombay city the works in connexion with the Malabar Hill sectional sewerage scheme were completed during the year. In Burma, £107,994 were spent on water-supplies, £87,459 on conservancy, £41,047 on drainage, and £79,179 on other sanitary works.

The Vacant Post of Sanitary Commissioner.

Since the issue of the report of sanitary measures in India, 1908–09, it has been our sad duty to chronicle the sudden death of Lieutenant-Colonel J. T. W. Leslie, C.I.E., I.M.S., Sanitary Commissioner with the Government of India, in March, 1911. Since this distinguished officer's death the duties of Sanitary Commissioner have been carried on by the Director-General of the Indian Medical Service at the instigation of the Government of India with a view to financial economy in saving the salary of this appointment. In THE LANCET of July 29th, 1911, p. 308, we added a word of warning and protest against this short-sighted policy, which we ventured to remark would be a retrograde one. Since then we are glad to record that the Secretary of State for India, in replying to Lord Curzon in the House of Lords in November, stated that, contrary to the proposal of the Government of India, but in agreement with the views of the Indian Council, he considered that it was desirable to retain the appointment. We stated in THE LANCET of Dec. 30th, 1911, p. 1868, that we felt that Lord Crewe came to the right decision in this matter. There is no doubt, and no one denies, that economy must be practised and that appointments which are not necessary must be abolished; but over and over again it has been shown that expenditure on prevention of disease really results in economy, and unless this department of research is directly represented at headquarters of Government there is danger that due consideration will not be given to its requirements. Up to the present no further official action has been made public, and we sincerely hope that the Government of India will no longer delay its selection and fill the vacancy by appointing a whole-time officer of the Indian Medical Service.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

West Riding of Yorkshire.—This county, with a population of about 1½ millions, comprises as many as 129 urban and 29 rural sanitary districts. Many of the former are "urban" only in name and illustrate the frequent fallacy of assuming that urban districts and towns are synonymous. Eight of them have not so much as 1000 inhabitants, while many have a large area. The urban district of Rishworth, for example, with a population of only 933, is 6551 acres in extent. When consideration is given on the one hand to the nature and limited resources of many of these districts and the small sums which are available for payment of their sanitary officers, and on the other hand to the demands of modern legislation and of Government departments on medical officers of health, it will be seen that it is only by the active participation of the county authorities that public health work can be made at all possible. Dr. J. R. Kaye's report, as usual, shows that much is done in this direction by the department under his charge. Among useful practices for this purpose the county inspections of isolation hospitals and the "nursing exchange" may be mentioned. A county scheme was formulated for a central sanatorium for pulmonary tuberculosis near Pateley Bridge to which different sanitary authorities in the county would contribute. Many authorities refused to participate, but sufficient support was forthcoming to enable the scheme to be pursued. Like all similar schemes, however, it has been suspended until the

distribution of funds under the National Insurance Act has been determined on. Meanwhile fever hospitals are being utilised to a limited extent for tuberculosis in various parts of the county. Stress is laid in the report on the active policy of dealing with bovine tuberculosis which has been followed in the county, and its justification in view of the findings of the Royal Commission. The county authorities examine milk samples for tubercle bacilli, but Dr. Kaye rightly insists on the danger of relying upon sampling milk, as if for the detection of adulteration, where tuberculosis is concerned. Time is necessary for guinea-pig inoculation, and where the result is positive it is often found that no data are available by which to identify the cow or herd which is at fault. To utilise bacteriological testing in the best way veterinary inspection is essential, the samples taken being of known origin and collected for specified reasons. So many instances of poisoning, due to the action of moorland waters on lead, were formerly to be traced in the county, that it is satisfactory to find that the known cases in 1910 were very few, and that practically all the public water-supplies yielding acid water are now subjected to neutralising treatment with more or less satisfactory results. In regard to housing Dr. Kaye refers to several "model villages" which owe their origin to the voluntary action of owners who have laid out their land on a regular system. In competition with any such scheme, however, it is open to any neighbouring owners to build on an entirely different and incompatible arrangement, and the jerry-builder can easily put up houses in the vicinity and reap a considerable advantage over the promoters of the "garden city" by reason of his freedom from the costlier restrictions. Some remedy for this is to be looked for under the town-planning part of the Housing Act of 1909; but, as Dr. Kaye observes, all available land in the South Yorkshire coal-field cannot be scheduled. The procedure under the Act is complicated and slow, and it is to be feared that the proper opportunities are being missed in many districts. In the case of insanitary houses Dr. Kaye refers to the onerous duties placed on medical officers of health under the housing regulations, and the impossibility of systematic inspection being carried out on any reasonable scale in districts where the officers who have to work the Act—the medical officer of health and the sanitary inspector—have neither the time nor the pay which are essential. This consideration is emphasised by many county medical officers of health in recent reports which have come to our notice, and must soon be taken seriously by the central departments concerned if the latest of our housing Acts, of which so much was expected, is to produce, outside large municipalities, any more satisfactory results than its predecessors.

County of Devon.—A "Devonshire stock" is associated with many fine traditions and good physical qualities, and we note with regret a birth-rate in the administrative county which has now fallen to 19·2—or 2 per 1000 less than in 1901. The low figure, as compared with England and Wales as a whole, is no doubt to be connected with the number of elderly people who live at the seaside and health resorts of the county, but there seems to be a very definite fall in the births among the indigenous population. It is clear that an insufficient and unsuitable supply of working-class dwellings contributes materially to this decrease. "The cry still comes from the rural districts concerning the lack of new houses, and the unsatisfactory condition of the old cottages in regard to ventilation, floors, dampness, insufficient window space, and bedroom accommodation." A useful diagram in Mr. G. Adkins's report shows some very marked differences in the tuberculosis death-rate between the several districts in the county, and it is to be hoped that with the advent of notification the circumstances associated with these differences will be further studied. The urban district of Torrington, with a tuberculosis death-rate of 2·7 per 1000, stands high in the list, as was the case in previous years. Personal instruction and advice on the prevention of the disease have been given by the education committee of the county through school lessons and lantern lectures by medical inspectors and agricultural lecturers, and Mr. Adkins anticipates good results from these and similar measures which have been adopted in many places in the county. The report discusses the water-supplies of the different districts, and enumerates a large number of cases in which a new supply or alteration of the existing works is imperative. Many of the summer visitors whose advent does so much for the prosperity of some of these Devonshire villages would welcome an active policy by the local authorities in this and in other respects—notably the provision of hospitals for infectious disease and improved arrangements for removal of refuse—in which this report shows that great deficiency often exists.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 94 largest English towns having an estimated population of 17,559,219 persons in the middle of this year, 8745 births and 5172 deaths were registered during the week ending Jan. 13th The annual rate of mortality in the large towns, which had declined from 16·4 to 15·3 in the four preceding weeks, was equal to 15 4 per 1000 last week. During the 13 weeks of the fourth quarter of last year, the mean annual rate of mortality in the 77 large English towns averaged 14·7 per 1000, and was 0·4 per 1000 in excess of the death-rate recorded in London during the same period. The annual death-rates in the several towns ranged from 4·7 in Southend-on-Sea, 8·1 in Swindon, 8·3 in Wimbledon, 8·6 in Hastings, and 8·9 in Walthamstow, to 22·4 in Dewsbury, 22·6 in Stoke-on-Trent, 23·2 in Halifax, 25 9 in Stockton-on-Tees, and 32·6 in Walsall.

The 5172 deaths from all causes in the 94 towns were 20 in excess of the number recorded in the previous week, and included 323 which were referred to the principal epidemic diseases, against 313 in the previous week. These 323 deaths from the principal epidemic diseases included 88 which resulted from whooping-cough, 69 from measles, 69 from diphtheria, 58 from infantile diarrhœa, 20 from enteric fever, and 19 from scarlet fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·0, or 0·1 per 1000 in excess of that recorded in the previous week. The highest annual death-rates per 1000 persons living from measles were 1·4 in Nottingham and in Oldham, 1·9 in Barnley, and 3 6 in Warrington; from whooping-cough, 1·1 in St. Helens and in Cardiff, 1 2 in Newport (Mon.), 1 8 in Bury, 1·9 in Merthyr Tydfil, 2·4 in West Hartlepool, and 4·5 in Walsall; and from infantile diarrhœal diseases, 1·5 in Stoke-on-Trent. The 69 deaths attributed to diphtheria, which were 20 in excess of the number in the previous week, included 18 in London and its suburban districts, 6 in Liverpool, 5 in Leeds, 4 in Norwich, 4 in Bradford, and 3 each in Gillingham, in Plymouth, and in Newcastle-on-Tyne.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospital, which had continuously decreased from 2213 to 1845 in the eight preceding weeks, had further declined to 1762 on Saturday last; 165 new cases of this disease were admitted to these institutions during the week, against 182, 162, and 193 in the three preceding weeks. These hospitals also contained on Saturday last 1242 cases of diphtheria, 276 of whooping-cough, 116 of measles, and 52 of enteric fever, but not one of small-pox. The 1259 deaths from all causes in London were 88 fewer than the number in the previous week, and were equal to an annual death-rate of 14·5 per 1000. The deaths referred to diseases of the respiratory system, which had been 332 and 382 in the two preceding weeks, declined to 290 last week, and were 1 fewer than the number registered in the corresponding week of last year.

Of the 5172 deaths in the 94 large towns last week 220 were attributed to different forms of violence, and 449 were the subject of coroners' inquests. The causes of 50, or 1·0 per cent., of the deaths registered in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and its 14 suburban districts, Leeds, Bristol, Bradford, Nottingham, Portsmouth, Salford, Leicester, and in 45 other smaller towns. The 50 uncertified causes of death last week included 9 in Birmingham, 7 in Liverpool, 4 in Darlington, and 3 in Manchester.

HEALTH OF SCOTCH TOWNS.

In the 18 largest Scotch towns having an estimated population of 2,182,400 persons in the middle of this year, 1111 births and 781 deaths were registered during the week

ending Jan. 13th. The annual rate of mortality in these towns last week was equal to 18·7 per 1000, and was 3·3 per 1000 above that recorded in the 94 English towns. During the fourth quarter of last year the mean annual death-rate in the former eight Scotch towns averaged 16·9 per 1000, or 2·2 per 1000 above that which obtained in the 77 English towns during the same period. The annual death-rates in the several Scotch towns last week ranged from 11·4 in Partick, 12·0 in Kilmarnock, and 12·3 in Paisley, to 20·6 in Greenock, 21·1 in Glasgow, and 21·9 in Aberdeen.

The 781 deaths from all causes in the 18 Scotch towns were 76 in excess of the number in the previous week, and included 82 which were referred to the principal epidemic diseases, against 83 in the previous week. Of these 82 deaths, 41 resulted from measles, 12 from whooping-cough, 10 from diphtheria, 10 from infantile diarrhœal diseases, 6 from scarlet fever, and 3 from enteric fever, but not one from small-pox. These 82 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·0 per 1000, or 1·0 per 1000 above that recorded in the 94 English towns. The 41 deaths attributed to measles were 7 in excess of the number returned in the previous week, and included 23 in Glasgow, 8 in Aberdeen, and 5 in Edinburgh. Of the 10 fatal cases of diphtheria, 3 were registered in Glasgow, 3 in Edinburgh, and 3 in Aberdeen.

The deaths referred to diseases of the respiratory system in the 18 towns numbered 147, and were 13 in excess of the number in the previous week; and 30 deaths were attributed to different forms of violence.

HEALTH OF IRISH TOWNS.

In the 22 town districts of Ireland, having an estimated population of 1,157,014 persons in the middle of this year, 683 births and 450 deaths were registered during the week ending Jan. 13th. The annual rate of mortality in these towns, which had been 18·0 and 18·6 in the two preceding weeks, further rose to 20·3 per 1000 in the week under notice. During the 13 weeks of the fourth quarter of last year the mean annual rate of mortality in these Irish towns averaged 18·4 per 1000; in the 77 English towns during the same period the mean annual death-rate did not exceed 14·7 per 1000, while in the eight Scotch towns it was equal to 16·9 The annual death-rates last week in the several Irish towns were equal to 20·7 in Dublin (against 14·5 in London), 19·5 in Belfast, 25·2 in Cork, 16·6 in Londonderry, 14·9 in Limerick, and 19·0 in Waterford; while in the 16 smallest of these Irish towns the death-rate was equal to 21·3 per 1000.

The 450 deaths from all causes in the 22 Irish towns were 37 in excess of the number in the previous week, and included 28 which were referred to the principal epidemic diseases, against numbers decreasing from 39 to 29 in the three preceding weeks; of these 28 deaths, 11 resulted from whooping-cough, 5 from measles, 4 from diarrhœal diseases, 3 from diphtheria, 2 from enteric fever, 2 from scarlet fever, and 1 from typhus, but not one from small-pox. These 28 deaths from the principal epidemic diseases were equal to an annual rate of 1·3 per 1000; the death-rate from these diseases last week did not exceed 1·0 in the 94 English towns, while in the 18 Scotch towns it was equal to 2·0 per 1000. The deaths attributed to whooping cough, which had declined from 16 to 4 in the three preceding weeks, rose to 11 last week, and included 6 in Belfast and 3 in Dublin. Of the 5 deaths referred to measles, which were equal to the average in the two preceding weeks, 3 were registered in Dublin. The 4 fatal cases of diarrhœa included 2 of infants under two years of age. The 3 deaths from diphtheria and the 2 fatal cases of scarlet fever occurred in Dublin. The 2 deaths from enteric fever were registered in Dublin and Limerick respectively, and that from typhus in Belfast.

The deaths referred to diseases of the respiratory system, which had been 85 and 99 in the two preceding weeks, further rose to 109 last week. Of the 450 deaths from all causes in the 22 Irish towns, 141, or 31 per cent., were recorded in public institutions, and 11 were attributed to different forms of violence. The causes of 10, or 2·2 per cent., of the total deaths in the week under notice were not certified either by a registered medical practitioner or by a coroner after inquest; in the 94 English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

VITAL STATISTICS OF LONDON DURING DECEMBER, 1911.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the ten diseases specified in the table was equal to an annual rate of 6·3 per 1000 of the population, estimated at 4,522,628 persons in the middle of last year. In the three preceding months the rates were 6·9, 8·5, and 7·8 per 1000 respectively. The lowest rates last month were recorded in Chelsea, Holborn, the City of London, Shoreditch, Stepney, and Southwark; and the highest rates in Hackney, Bethnal Green, Deptford, Greenwich, Lewisham, and Woolwich. The prevalence of scarlet fever again showed a decline last month from that recorded in other recent months; the greatest proportional prevalence of this disease last month was recorded in St. Marylebone, Hackney, Deptford, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 1878 scarlet fever patients at the end of December, against 2152 and 2103 at the end of the two preceding months; the weekly admissions averaged 198, against 261, 317, and 254 in the three preceding months. Diphtheria was much less prevalent than it had been in either of the two preceding months; among the several boroughs the greatest proportional prevalence of this disease last month was recorded in Paddington, Hammersmith, Hampstead, the City of Loudon, Wandsworth, Greenwich, Lewisham, and Woolwich. There were 1294 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 1143 and 1327 at the end of the two preceding months; the weekly admissions averaged 141, against 168 and 180 in the two preceding months. The prevalence of enteric fever also showed a marked decrease in December, as compared with that in the first and second months of the quarter; this disease was proportionally most prevalent last month in Paddington, Kensington, the City of Westminster, Bethnal Green, Stepney, Poplar, Bermondsey, and Lewisham. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 160 and 85 at the end of the two preceding months, had declined to 76 at the end of last month; the weekly admissions averaged 35, against 90 and 46 in the two preceding months. Erysipelas was proportionally most prevalent in Hammersmith, St. Pancras, Hackney, Finsbury, Shoreditch, Bethnal Green, Southwark, Battersea, Deptford, and Greenwich. The 29 cases of puerperal fever notified during the month included 5 in Stepney, 4 in St. Pancras, 3 in Lambeth, and 2 each in Kensington, Fulham, Islington, Hackney, and Battersea. Six cases of cerebro-spinal meningitis and 6 of poliomyelitis were notified during the month.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex- and age-constitution of the populations of the several boroughs. During the four weeks ending Dec. 30th the deaths of 5314 London residents were registered, equal to an annual rate of 16·1 per 1000; in the three preceding months the rates had been 16·8, 15·1, and 14·1 per 1000 respectively. The death-rates last month ranged from 10·8 in Hampstead, 12·9 in Stoke Newington, 13·1 in Wandsworth and in Lewisham, 13·3 in Chelsea, and 13·8 in Woolwich, to 19·3 in Southwark, 19·5 in Shoreditch, 19·7 in Deptford, 20·6 in Finsbury and in the City of London, 22·0 in Greenwich, and 24·0 in Holborn. The 5314 deaths from all causes included 50 from measles, 13 from scarlet fever, 61 from diphtheria, 37 from whooping cough, 12 from enteric fever, and 63 among children under two years of age from diarrhœa and enteritis. The lowest death-rates from these diseases in the aggregate were recorded in Fulham, Chelsea, the City of Westminster, St. Marylebone, and Woolwich; and the highest rates in Holborn, Shoreditch, Poplar, Southwark, Deptford, and Greenwich. The 50 deaths from measles were only one-third of the corrected average number in the corresponding period of the five preceding years; 15 belonged to Deptford, 12 to Greenwich, 4 to Paddington, 4 to Lambeth, 3 to

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING DECEMBER, 1911.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1911.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.‡									Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON...	4,522,628	—	902	683	—	69	—	29	481	6	6	2176	6·3	—	50	13	61	37	12	63	236	0·7	5314	16·1
West Districts.																								
Paddington	142,541	—	16	28	—	3	—	1	14	—	—	62	5·7	—	4	—	1	—	—	—	5	0·5	153	14·9
Kensington	172 296	—	22	27	—	4	—	2	14	—	1	70	5·3	—	—	1	2	—	1	2	6	0·5	184	15·0
Hammersmith	121,837	—	23	23	—	2	—	1	16	—	1	66	7·1	—	—	1	2	—	—	2	5	0·5	127	14·2
Fulham	153,726	—	28	27	—	1	—	2	13	—	1	72	6·1	—	—	1	3	—	1	—	5	0·4	162	14·3
Chelsea	66,218	—	9	6	—	—	—	—	4	—	1	20	3·9	—	—	—	—	1	—	1	2	0·4	65	13·3
City of Westminster	159 709	—	29	15	—	5	—	—	13	—	—	62	5·1	—	—	1	1	—	—	—	2	0·2	168	15·4
North Districts.																								
St. Marylebone	117,844	—	39	11	—	—	—	—	11	1	—	62	6·9	—	—	1	—	—	—	1	2	0·2	140	16·5
Hampstead	85,599	—	18	21	—	—	—	—	3	—	—	42	6·4	—	—	—	2	—	—	1	3	0·5	63	10·8
St. Pancras	218,031	—	35	32	—	2	—	4	26	—	1	100	6·0	—	—	—	4	1	—	5	10	0·6	261	16·3
Islington	327,234	—	24	46	—	1	—	2	29	—	—	102	6·5	—	1	1	8	1	—	4	15	0·6	376	15·6
Stoke Newington...	50,669	—	11	8	—	1	—	—	2	—	—	22	5·7	—	1	—	—	—	1	—	2	0·5	48	12·9
Hackney	222,674	—	75	38	—	2	—	2	29	—	—	146	8·5	—	—	—	4	1	1	4	10	0·6	286	17·4
Central Districts.																								
Holborn	49,084	—	5	4	—	1	—	—	3	—	—	13	3·5	—	1	—	—	1	1	1	4	1·1	84	24·0
Finsbury	87,639	—	12	13	—	1	—	—	19	—	—	45	6·7	—	—	—	2	—	1	1	4	0·6	134	20·6
City of London	19,475	—	—	4	—	1	—	—	1	—	—	6	4·0	—	—	—	1	—	—	—	1	0·7	28	20·6
East Districts.																								
Shoreditch	111,284	—	13	9	—	1	—	—	13	—	—	36	4·2	—	1	—	4	1	—	3	9	1·1	159	19·5
Bethnal Green	128.247	—	27	23	—	3	—	—	27	—	—	80	8·1	—	2	1	1	—	—	2	6	0·6	145	14·8
Stepney	279,560	—	15	30	—	11	—	5	32	1	—	94	4·4	—	—	1	—	4	1	6	12	0·6	355	17·3
Poplar	162,290	—	20	28	—	7	—	1	19	1	—	76	6·1	—	—	—	4	6	2	1	13	1·0	208	17·2
South Districts.																								
Southwark	191.595	—	23	18	—	1	—	—	25	1	—	68	4·6	—	3	—	3	7	—	2	15	1·0	272	19·3
Bermondsey	125,840	—	20	12	—	5	—	1	8	—	—	46	4·8	—	2	—	1	1	—	2	6	0·6	171	18·1
Lambeth	298,032	—	62	28	—	2	—	3	31	—	—	126	5·5	—	4	1	5	5	—	6	21	0·9	367	16·6
Battersea...	167,765	—	41	19	—	—	—	2	20	—	1	83	6·4	—	—	—	1	2	—	6	9	0·7	177	14·8
Wandsworth	313,389	—	77	58	—	6	—	1	21	1	—	164	6·8	—	—	2	1	1	1	7	12	0·5	299	13·1
Camberwell	261,407	—	43	33	—	1	—	1	31	—	—	109	5·4	—	3	1	3	—	—	3	10	0·5	291	15·0
Deptford	109,475	—	38	15	—	1	—	1	22	—	—	77	9·2	—	15	—	2	4	1	2	24	2·9	157	19·7
Greenwich	95,982	—	27	38	—	1	—	—	18	—	—	84	11·4	—	12	1	2	—	1	—	16	2·2	158	22·0
Lewisham	161,677	—	45	44	—	4	—	—	10	—	—	103	8·3	—	1	—	3	1	—	1	6	0·5	156	13·1
Woolwich...	121,509	—	45	25	—	2	—	—	6	1	—	79	8·5	—	—	—	1	—	—	—	1	0·1	120	13·8
Port of London	—	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex- and age-constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard. ‡ Deaths from "typhus fever" and "other continued fevers" are not now distinguished in the Registrar-General's weekly returns; these two columns are therefore omitted from the Table.

Southwark, 3 to Camberwell, 2 to Bethnal Green, and 2 to Bermondsey. The 13 fatal cases of scarlet fever were also equal to only one-third of the corrected average number; of these 13 deaths, 2 belonged to Wandsworth and 1 to each of eleven other boroughs. The 61 deaths from diphtheria slightly exceeded the corrected average number, and included 8 in Islington, 5 in Lambeth, and 4 each in St. Pancras, Hackney, Shoreditch, and Poplar. The 37 fatal cases of whooping-cough were 31 fewer than the corrected average number; of these 7 belonged to Southwark, 6 to Poplar, 5 to Lambeth, 4 to Stepney, and 4 to Deptford. The 12 deaths from enteric fever, of which 2 belonged to Poplar, showed a decline of 7 from the corrected average number. The greatest proportional mortality from diarrhœa and enteritis among children under two years of age was recorded last month in St. Pancras, Shoreditch, Stepney, Lambeth, Battersea, and Wandsworth. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases (excluding diarrhœa) was nearly 49 per cent. below the average.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

Colonel M. W. Kerin, C B., principal medical officer of the Seventh (Meerut) Division, has joined at Meerut Cantonment from Mussooree. Lieutenant-Colonel C. Birt has been appointed a Member of the Army Medical Advisory Board as Expert in Tropical Diseases, vice Colonel Sir David Bruce. Lieutenant-Colonel M. L. Hearn, senior medical officer, Ceylon, has been selected for the higher rate of pay under Article 317 of the Royal Warrant. Lieutenant-Colonel R. L. R. Macleod has arrived home from India on completion of his tour of foreign service. Lieutenant-Colonel S. Westcott, C.M.G., lately commanding the station hospital at Chakrata, has been appointed in charge of the Military Hospital at Edinburgh. Lieutenant-Colonel S. Hickson has arrived home from Wynberg. Lieutenant-Colonel T. B. Winter has taken over charge of the Military Hospital at Colchester and command of No. 9 Company, Royal Army Medical Corps. Lieutenant-Colonel F. J. Morgan has been detailed for duty on board the transport s.s. *Plassy* leaving Bombay for Southamptom on March 13th. Lieutenant-Colonel C. C. Reilly has been placed under orders for a tour of service with the Southern Army in India, and on arrival will be appointed to command the Station Hospital at Colaba.

Major F. S. Irvine has been selected to succeed Brevet-Lieutenant-Colonel A. P. Blenkinsop as Assistant Commandant at the Royal Army Medical College, London. Major A. C. Fox has been ordered to join the Irish Command on Feb. 1st, and on arrival will be appointed to the Dublin District for duty. Major W. Hallaran, from Jhansi, has taken over charge of the Station Hospital at Chakrata. Major G. S. McLoughlin, D.S.O., has been selected to hold charge of the Military Hospital, Golden Hill. Major M. Boyle has been posted to Jersey for duty. Major C. S. Smith, from Mullingar, has been placed under orders to embark for a tour of service in India. Major J. C. Jameson has been appointed in charge of the Surgical Division at the Royal Herbert Hospital, Woolwich. Major C. W. H. Whitestone has been transferred from Cherat to Peshawar as Staff Officer of Medical Mobilisation Stores. Major F. J. W. Porter, D.S.O., has taken up duty at Reading. Major H. B. Fawcus has been taken on the strength of the London District on taking up the appointment of Assistant Professor of Hygiene at the Royal Army Medical College, in succession to Major C. F. Wanhill, placed under orders for a tour of service in India. Major J. M. Cuthbert, from Edinburgh, has taken up duty at Leith. Major J. Cowan has been placed under orders to embark for India on Feb. 29th. Major A. J. MacDougall, from Ceylon, has been appointed for duty in the Belfast District.

Captain H. C. Sidgwick, from Jamaica, has been posted to the London District. Captain R. H. MacNichol has taken up duty at the Royal Herbert Hospital, Woolwich, as Specialist in Dermatology and Venereal Diseases. Captain H. T. Stack, serving at Belfast, has been placed under orders to embark for a tour of service in India. Captain V. T. Carruthers has been placed under orders to join the Cork District on Jan. 19th. Captain O. Ievers, from Wynberg, has been appointed to Dublin for duty. Captain F. E. Rowan-Robinson, from Norwich, has embarked for a tour of service in Bermuda. Captain W. C. Nimmo, in charge of the Cantonment General Hospital at Chakrata, has been detailed for duty on board the transport s.s. *Plassy*, which left Bombay for Southampton on Jan. 11th. Captain H. L. Howell, in charge of the Brigade Research Laboratory at Ahmednagar, has been granted eight months' leave of absence home from India. Captain E. W. Powell, from Aden, has been appointed to Cork district for duty. Captain V. H. Symons, from Bloemfontein, has taken up duty at Belfast. Captain A. H. Jacob has been transferred from the Second (Rawal Pindi) Division to the Third (Lahore) Division. Captain W. Egan, from Rangoon, has been granted eight months' leave of absence, with permission to revert to the Home Establishment on expiration thereof.

Lieutenant H. Gall has been transferred from Simla to Ambala for duty at the Station Hospital. Lieutenant O. W. McSheehy and Lieutenant H. F. Joynt have embarked for a tour of service in South Africa. Lieutenant T. J. Hallinan, from Cork, has taken up duty in the Dublin District. Lieutenant J. Gilmour, from Devonport, has taken up special duty under the Foreign Office.

INDIAN MEDICAL SERVICE.

Colonel F. C. Reeves has arrived home on leave of absence from India. Colonel H. Hendley, principal medical officer of the Sirhind and Jullundur Brigades, Third (Lahore) Division, has taken up duty at Army Headquarters, Simla, as Deputy Principal Medical Officer, His Majesty's Forces in India. Lieutenant-Colonel J. Penny, Bengal Presidency, has returned to India on completion of his furlough. The services of Major W. E. McKechnie have been placed at the permanent disposal of the Government of the United Provinces. Major D. H. F. Cowan has taken up duty as Civil Surgeon at Shahpur. Major C. R. Pearse has been appointed Civil Surgeon at Maymyo during the absence on special military duty of Lieutenant-Colonel A. O. Evans. The services of Major N. P. O'Gorman Lalor have been placed permanently at the disposal of the Government of Burma for employment in the Civil Medical Department. Major C. B. Prall, superintendent of the Central Prison at Bareilly, has been granted 11 months' leave of absence home from India. Major S. Anderson has been permitted to extend his furlough. Major J. Mulvany, on return from leave, has been appointed Superintendent of the Central Jail at Kalighat, Calcutta. Major C. Hudson has been granted 18 months' furlough home from India.

Captain R. T. Wells, officiating civil surgeon at Dera Ghazi Khan, has been appointed Plague Medical Officer at Rohtak, in succession to Captain S. B. Mehta, whose services have been placed at the disposal of the Government of India, Department of Education. Captain S. H. Lee-Abbott, civil surgeon at Dalhousie, has been selected for appointment as Civil Surgeon at Ferozepore. Captain W. W. Jendwine, officiating civil surgeon at Multan, has taken up duty as Plague Medical Officer at Rawal Pindi. Captain D. N. Anderson has arrived home on leave of absence from India. Captain J. A. Cruikshank has been appointed to the Bacteriological Department and his services placed temporarily at the disposal of the Madras Government. Captain G. C. L. Kerans has taken up duty as Specialist in Ophthalmology to the Eighth (Lucknow) Division. Captain W. D. A. Keys has been appointed to officiate as Civil Surgeon at Karwar. Captain F. W. Sumner, officiating civil surgeon at Shahjahanpur, has been transferred to Fategarh. Captain G. S. Husband has been attached to the Jail Department in the Punjab. Captain J. C. G. Kunhart has been appointed permanently to the Bacteriological Department.

Lieutenant A. L. Sheppard has been appointed to the medical charge of the 122nd Rajputana Infantry. Lieutenant V. P. Norman has arrived home on leave of absence from India. Lieutenant K. K. Mukerji has been appointed Specialist in the Prevention of Disease at Kohat. Lieutenant J. H. T. Morgan has taken up duty at Cawnpore as Officiating Medical Officer to the 9th Hodson's Horse during the absence of Captain C. W. F. Melville, who is on active service with the Abor expedition on the North-East Frontier.

SCALE OF FEES FOR PROFESSIONAL SERVICES BY MEDICAL OFFICERS IN INDIA.

Revised regulations have been promulgated by the Home Department of the Government of India regarding the scale

of fees for professional services to native chiefs and Indian nobles to be charged by medical officers of Government. The following are the more important clauses:—1. An officer is entitled to demand or receive such fees as may be arranged between himself and the person employing him, provided that he does not without the special permission of the local Government, obtained as provided below, demand or receive in addition to his travelling expenses a higher fee than Rs. 500 (£33 6*s.* 8*d.*) a day for the first three days and Rs. 250 (£16 13*s.* 4*d*) a day thereafter, the full daily fee being given for every complete period of 24 hours' absence with a proportionate fee for periods of less than 24 hours. 2. For similar attendance not involving absence from his headquarters a medical officer may demand or receive fees in accordance with the scale which he has fixed for his patients generally. 3. Before accepting or demanding from a ruling chief or Indians of position as referred to in Rule 1 a fee in excess of the rates laid down in Rules 1 and 2 above, a medical officer must report the case confidentially to the local administrative medical officer, who will obtain unofficially and communicate to him the orders of the local Government. When taking the orders of Government the administrative medical officer will be careful not to disclose any of the medical particulars of the case. 4. Local Governments and administrations shall have full power to dispose of all cases so reported to them, but shall be at liberty to consult the Director-General, Indian Medical Service, or to refer any particular case for the orders of the Government of India. 5. Fees for operations and confinements may be accepted equal in amount to those current in similar circumstances in the profession in the United Kingdom. The above revised rules are stated to cancel the Home Department Notification No. 100, dated Feb. 2nd, 1911.

NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the Directors of the Naval Medical Supplemental Fund, held on Jan. 9th, Sir W. Graham Greene, K.C.B., in the chair, the sum of £45 was distributed among the several applicants.

Correspondence.

"Audi alteram partem."

THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—Dr. Lauriston E. Shaw, both in his letter to you and in sundry other letters to the *Times*, makes abundantly clear his personal approval of the National Insurance Act. To him and to the majority of the executive of the British Medical Association this Act appears commendable, and its medical arrangement, after all, not so bad. From those who are of that opinion it is not surprising to have the sort of extenuations and apologies put forward that constantly appear in their letters and speeches. Dr. Shaw cannot agree with Sir Alfred Pearce Gould as to the demerits of "contract practice"; and looking at his reasons it is not probable that it would be possible to prove to him that, nevertheless, Sir Alfred Pearce Gould's view is correct, and held by the great majority of the medical practitioners of the country. The latter are not likely to be converted to Dr. Shaw's opinion by the kind of reasoning he seems to delight in: even if they admit that "this principle of payment"—viz., the payment for work done—is absent from the army, the navy, and even if Cabinet ministers scout the payment by fee. I might even add that if Dr. Shaw were to affirm that he himself, if he had his choice, would prefer to be paid by contract, it would not alter their opinion on this point. It may, no doubt, be said *per contra*, that I, and others like me, to whom this Act does not appear commendable, and who regard its medical proposals as bad as they well could be, on our part attack the Act in the same unscrupulous manner as they defend it. I do not think so. Most of us waited loyally till the Bill became an Act; till it was possible to see how far the executive of the Association was able to modify or remove what was almost universally condemned by the whole profession. But now the Act is an accomplished fact, and it is left to the profession to say whether it is satisfied with what has been done, and to decide—without law breaking—whether it will accept or reject the medical duties offered to it. It seems to me the duty of every practitioner to make up his mind which of the two alternatives he is going to choose. The opponents of this Act may be pessimistic, but they interpret its provisions in their ordinary grammatical sense. Above all, they are not so prone to confound *possibilities* with *probabilities*. No doubt, the loose and slovenly drafting of the Act might justify illimitable possibilities, and might grant the profession terms that all might approve of. Indeed, the Commissioners might make quite another Act of it. Well, let us wait and see! This has been called by some the "policy of doing nothing," the "policy of running away," &c. Let us rather call it the policy of "masterly inactivity," waiting to see what our opponents are going to do. In spite of Dr. J. H. Taylor's terrible warning against letting slip the doles ear-marked to us by the provisions of the Act, even if the present condition of medical practice in this country were prolonged for a considerable time longer, as a general practitioner of some years' standing I cannot help thinking that it would be far better to follow the advice of Sir Alfred Pearce Gould and Sir Clifford Allbutt, and even of Dr. F. J. Smith, than be led away by the optimistic and, in my opinion, misleading generalisations of Dr. Shaw and other favourers of this latest outcome of modern democracy.—I am, Sir, yours faithfully,

Jan. 13th, 1912. MAJOR GREENWOOD.

To the Editor of THE LANCET.

SIR,—It would almost appear ungracious on my part, being myself only a guest and not a member of the British Medical Association, to play the part of critic of the proceedings of the new organisation—the Reform Committee—which it was attempted to launch on the medical world at a meeting held last Tuesday, Jan. 9th, at the Hammersmith Town-hall, yet I would contend that it is not only right, but almost a duty, to watch the progress of, and discuss the effects of, any serious movement by any section of the medical profession which would vitally affect the fortunes and interests of us all, both individually and collectively, as the movement there initiated. I make no apology, therefore, for expressing my impressions as an outsider of the meeting, and of what I imagine will be the result. The old motto, "Audi alteram partem," seemed to form no part of the programme of the meeting, and the noisy and by no means pertinent interruptions which greeted expressions of opinion adverse to the scheme must have disappointed, if not disgusted, many of those who looked on at the proceedings from a comparatively dispassionate point of view.

Now as to the possible results of this new revolutionary venture. How is it going to affect the profession? Is it going to bring us any nearer to the attainment of the six cardinal points on which the profession is practically united? It must be remembered there exists a large body of medical men who have not been, or have ceased from various causes to be, members of the British Medical Association. We have been, for the sake of unity, content to let that body assume, as the largest organised body in the medical profession, the rôle of negotiator or bargainer with Mr. Lloyd George in regard to the demands of the profession. Such meetings as took place last Tuesday cannot but help disillusion us of the wisdom of this step, for the more we hear and know of the history of the bargaining that went on, the more we feel convinced that those whom in our innocence we trusted sold our birthright for the proverbial mess of pottage, the more we feel that the reasonable demands of the profession were sacrificed on the altar of political expediency!

It matters little now that the feeling of betrayal is seizing on the members of the Association, and that they wish to turn and rend those who had the direction of the negotiations—viz., the Council of the Association. What we poor practitioners now want, and vainly hoped would be given at the meeting to which we were invited, was a straight lead how to connect up the broken strands of the negotiation where it was broken by Mr. Lloyd George when he informed the Council that most of our reasonable demands could not be inserted into the Bill. What we want now is not

recriminations, but what is the best course under the circumstance to pursue in order to obtain them, and thus be able in as efficient manner as possible to administer to the sick and poor the medical benefit which the originator of the Bill had in his mind. It may be worth while reminding my readers that Mr. Lloyd George stated as one of the chief attractions of his Insurance Bill that he was offering to the insured "good doctoring without doctors' bills" (and, by the way, without coming to terms with the doctors). Now, to my mind "good" doctoring can only be obtained as the result of mutual confidence between doctor and patient—confidence on the part of the patient that he is receiving the best of attention and skill, confidence on the part of the doctor that he is receiving fair and adequate remuneration for services rendered. No system can possibly be good, or can supply a good article, that does not meet these requirements. The doctors laid down six demands as the minimum with which they would be satisfied; the Bill has been passed and the profession's minimum has not been satisfied. To my mind it is as important to the insured as to the doctors that the bargain should be a complete one; how otherwise are they to expect "good" doctoring?

Now I went to the meeting on Tuesday, as I have before remarked, hoping that some course might be devised by which the demands of the profession might have been satisfied. I wanted bread and was offered a stone. The stone was to turn out the Council of the British Medical Association and attempt to induce Mr. Lloyd George to introduce an amending Bill which would include the unsatisfied demands of the profession. What a chimera! What fatuity! Mr. Lloyd George already sees by such meetings as these that the members of the medical profession are already cutting one another's throats, sees that he has only to wait and watch, and the profession will eventually, like the Kilkenny cats, murder one another, and lie, a victim to suicide, in the hollow of his hand. Distrust, disunion, is playing his game; the want of unity, of solidarity, of cohesion, is playing havoc with any chance we have of united action, and hope deferred of a united profession is making the heart of the poor humble practitioner sick. By such meetings as were held on Tuesday we are not likely to be any "forrader," and recrimination is no remedy. We poor practitioners want unity, unity, and again unity; for union alone makes strength.—I am, Sir, yours faithfully,

RICHARD BEVAN, L.R.C.P. Lond., D.P.H.

Girdlers'-road, Brook Green, Jan. 15th, 1912.

THE MORBID DIATHESES.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Jan. 6th Sir Dyce Duckworth, who honoured me by attending my Bradshaw lecture, writes with his usual courtesy in defence of the Morbid Diatheses, which I maintained were gradually disappearing under modern investigation, that had proved various diseases formerly believed to be of constitutional origin to depend on the inroads of external pathogenetic microbes. I could but feel as I was lecturing that I was treading with elephantine weight on many of his inoffensive pedal digits, and I was, therefore, the more gratified to receive from him a cordial appreciation of my lecture, with many points in which I felt sure he was not in agreement.

In the letter addressed to you Sir Dyce Duckworth states that my views on the medical diatheses, though "rather startling," he had reason to believe were shared by "the younger pathologists and surgeons." In this I am inclined to think he is correct; but he goes on to depreciate, in a manner I never dreamed of, the workers of the past or passing generation. "The older physicians are to be regarded as rather unwise men with feeble powers of observation" is a sentence which there is nothing in my lecture to warrant. On the contrary, I spoke of "the giants in observation" who were misled by a predominant theory. I do not deny the influence of *soil*, but I deny that it is essentially a family product, or that it is of "equal importance" with the *seed*, as Sir Dyce Duckworth terms the invading microbes.

To illustrate my position, I will mention a case that was brought under my notice as recently as Saturday last. The head fettler on a local railway, a very strong man, with a healthy wife and a family of five, left his cottage two or three years ago for a larger one, in which the previous occupant and his sister had died from phthisis. Soon after, his second son, a boy of 15 years, was noticed to be ailing and he is now in an advanced incurable stage of consumption. Thus a family, all of whom were previously healthy, by entering an infected cottage were subjected to a tubercular test which picked out the weakest.

I am, Sir, yours faithfully,

Jan. 16th, 1912. R. CLEMENT LUCAS.

To the Editor of THE LANCET.

SIR,—Amidst the many and complex problems of present-day views of mental and physical disease we are not very much nearer the truth than were our forefathers. Certainly, advancing strides have brought about important changes in the line of treatment, but are these not constantly changing in detail? Everyone has some part of his mental or physical side defective. It is our duty to search out these defects on experimental principles and provide a suitable environment. And if we observe closely the environment of the insane, and not least the feeble-minded, we shall recognise progression. Given any pattern of mind and body a suitable environment can invariably be found. It is interesting to note, too, that institutional care and management of mental cripples is preventive of appendicitis. That is to say, it is a physical disease very rarely seen in asylums. But we have no proof that the cæcum and its appendix, nay, the intestinal tract, is of a superior build among the insane than is to be found outside asylum environment.

I am, Sir, yours faithfully,

Alton, Hants, Jan. 12th 1912. JOHN FREDK. BRISCOE.

UNICELLULA CANCRI.

To the Editor of THE LANCET.

SIR,—In the two lectures given by Sir Henry Butlin, and which appeared *in extenso* in THE LANCET of Nov. 25th and Dec. 2nd, 1911, the author leads up to the conclusions that the cancer cell is derived from, and in a general way inherits the morphology of, the cells of the part in which it takes its origin; that the "vital difference" between it and the normal cell is that it will survive if implanted whilst the normal cell will die; that the difference in the conduct of the cells is due to the fact that the cancer cell has become "endowed with the gift of life," which constitutes it an independent creature; that the cancer cell is, in short, a new genus of organism vastly removed, phylogenetically, from the complex creature in which it originates.

Practically all students of the cancer problem are agreed that the cancer cell is derived directly from the normal cell, and the great majority of them are satisfied that no parasitic micro-organism plays any essential part in bringing about the change. The explanation of the difference in behaviour, within the body, of the progeny of the cancer cell and the progeny of the normal cell is, at present, the central problem of malignant disease. That cancer cells will survive and that normal cells will not survive when implanted is a generalisation to which there are so many obvious exceptions that it is improbable that such a peculiarity is the actual "vital difference" between the two sorts of cell. The successful transplantation followed by orderly growth of cutaneous epithelium and certain other tissues, and the phenomenon of the implantation cyst, prove that normal cells may survive if transplanted. The constant distinction between normal and malignant cells does not appear to be one of structure, composition, or metabolic activity, but rather one of conduct with respect to environment. The progeny of normal epithelial cells will divide and progress only in a direction away from the connective tissues; the progeny of carcinomatous cells are indifferent as to the direction in which they multiply.

That epithelial tissues are normally restrained and directed in their growth by purely physico-chemical processes has not been proved, yet the anticipation that it will be so proved seems to have engendered in many minds the belief that such is actually the case. This premature conclusion has distracted our attention from the otherwise obvious fact that in every living cell we encounter the incomprehensible phenomena of life and instinct. All the phenomena of the cosmos are not comprised within the domains of the physical sciences.

In my essay on Light, Pigmentation, and New Growth

(July, 1909) I postulated the existence in every normal cell capable of reproducing itself by fission of a psychic element akin to instinct. I opined that it is this element which controls and directs the behaviour of the cell in accordance with the particular "traditions" of its genus; and I gave reasons for my suggestion that the abnormal conduct of cancer cells with respect to their environment is due to an impairment or loss of this psychic principle. It certainly seems more probable that malignant disease is due to the loss of some controlling influence rather than to the accession of a quality novel and little short of supernatural in its character. I say little short of supernatural because it is against the order of nature that a new genus of unicellular animals should be repeatedly springing into existence and that the same genus should on every occasion be entirely exterminated.

I am, Sir, yours faithfully,

WILFRED WATKINS-PITCHFORD, M.D. Lond., F.R.C.S. Eng.

The Government Laboratory, Johannesburg, Dec. 24th, 1911.

A PRESCRIPTION FOR COLITIS.

To the Editor of THE LANCET.

SIR,—Although I am not now in practice perhaps you will permit me to offer the profession through your courtesy a piece of therapeutic information that I have gained.

Many years ago I had a patient whom I generally attended on a midnight summons, suffering from abdominal pain, vomiting, and constipation. There was a history of diffuse peritonitis in childhood, and my diagnosis was a peritoneal adhesion which became inflamed by diet, chill, &c. I sent him to a distinguished surgeon, who said that he undoubtedly had appendicitis, and proposed an operation. This, however, the patient would not submit to.

In this case, of course, careful attention had to be bestowed upon the action of the bowels, and I tried many laxatives with more or less success. It finally struck me that a local emollient would be an excellent treatment and I wrote the following prescription:—

R P. gum. acaciæ	℥iv.
Syr. cascaræ sag.	℥ii.
Terrol.	℥ii.
Ft. pasta.	℥ii.

This kept my friend for ten years perfectly comfortable; he ceased taking it about one year ago as he does not now require any treatment. It was known as "Falkiner's table varnish" among our inner circle.

The other day I saw an old patient and friend of mine who is the widow of a distinguished London surgeon whom I conceived to be suffering from colitis, and sent the prescription to her, and being a great sufferer myself from the latter complaint when asking the chemist to send the copy of the prescription ordered a bottle for myself. I have only been using it for three days, but I have almost complete ease from the wearying sensation of colitis, which is so exhausting physically and mentally, and I also find that the hydrocarbon acts as a powerful intestinal disinfectant and deodoriser, and that it reduces the production of gases. Trusting that my experience may be of utility and enable many of my professional brothers to give relief in troublesome cases,

I am, Sir, yours faithfully,

Dublin, Jan. 10th, 1912. NINIAN M. FALKINER.

THE ACTION OF RADIUM ON MALIGNANT GROWTHS.

To the Editor of THE LANCET.

SIR,—My attention has been drawn to a letter which appeared in THE LANCET of Jan. 6th under the above title by Dr. F. L. de Verteuil, Surgeon, R.N. (retired), who, in referring to the different theories that have been advanced on the essential therapeutics of such radio-active agencies as radium and the X rays, ascribes priority in regard to one of them to Mr. Deane Butcher—namely, that of the induction of auto-vaccination by the X rays, as revealed by a series of independent estimations of the opsonic index against the particular pathogenic micro-organism concerned in those infectious maladies in which the lymphatic glands become involved. As Dr. de Verteuil is, in this respect, under a slight misapprehension, I beg leave to refer him to a contribution made by me to THE LANCET in 1907 (Vol. I., p. 215), as well as to the *Archives of the Roentgen Ray* for June, 1910, p. 2, where Mr. Deane Butcher urges a plea for the pressing requirement of a continuance and repetition of the line of research previously adopted by me.

I find that, up to date, my observations and experiments in the afebrile types of tuberculosis have been repeated independently by Dr. Lawrence and Dr. Crane, of the United States, both of whom corroborated and confirmed them. Also by Messrs. Paoli and Nuncioni, of Italy, who applied the X rays to the lymphatic glands involved in primary syphilis, confirming my views. In this country this fascinating research has been neglected, partly because radiologists or radiographers are more concerned with the electro-mechanics of apparatus construction, and the getting of mere results, than they are with pathology or clinical medicine. The loose and unscientific use of the term "vaccination" in the above reference is, in my opinion, calculated to give offence to the intelligence of both pathologists and clinicians.

Surely the term "vaccination," in its modern acceptation, connotes the introduction into the human organism of a certain number of killed and sterilised pathogenic micro-organisms, which specifically pertain to a particular malady, for the purpose of producing an increased resisting power against that particular micro-organism by evoking one or more precise physiological reactions in place of the pathological reactions, manifestations of which exist at the site of the lesion and in the system. By the term "auto-vaccination" it was intended to connote the further development or completion of the physiological process, consequent upon an infection, in conformity with the protective mechanisms of the organism, it being recognised that a pathological manifestation resulted from an incoördination in the chain of processes taking place during a reaction.

To speak of the X rays causing a "vaccination" or of "producing antitoxins" by stimulating leucocytes, can never appeal to the pathologist, and at the meeting of the annual congress of the British Medical Association held at the Imperial Institute, 1910, I felt obliged to make a gentle protest in this reference. On that occasion an instructive paper was read by Dr. W. S. Lazarus-Barlow, entitled "Radiation and Biological Processes; with Some Reference to the Skotographic Action of Animal Tissue." Dr. Lazarus-Barlow is, above all other things, a pathologist, and his observations are highly interesting as regards those minute finer changes in protoplasm which are more of a molecular nature than of a mere chemical change. I would recommend this paper and its study to Dr. de Verteuil, who seems to be attracted by the tertiary grosser changes of the tissues. These finer changes are far beyond the power of any microscope to reveal.

I am, Sir, yours faithfully,

Wimpole-street, W., Jan. 9th, 1912. H. D. MCCULLOCH.

LOCAL REACTION IN TUBERCULIN TREATMENT.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Dec. 30th, 1911, Dr. E. E. Prest contributes a letter on Some Points in the Treatment of Pulmonary Tuberculosis. Dr. Prest states he noticed "that cases in which there is a well-marked local reaction to an injection of tuberculin have relatively a favourable prognosis."

With reference to this statement, it is noteworthy that as long ago as 1897 Dr. Carl Spengler, of Davos, emphasised the high importance of local reactions in the administration of tuberculin. He showed that the bactericidal action, indirectly induced by tuberculin, varies with the intensity of the local reactions. Further, from his extensive researches he pointed out that the intensity of the local reaction at the seat of injection corresponds with the intensity of the local reaction at the foci of disease. (See Carl Spengler's article, "Über Tuberkulinbehandlung," published in 1897 by F. Schuler, Chur.) Obviously, the intensity of the local reactions must be carefully regulated.

When Carl Spengler in 1904 introduced the use of tuberculin derived from bovine tubercle bacilli, the importance of local reactions became even more evident. Without attention to these the wrong kind of tuberculin must often be used. Of course many cases are unsuitable for tuberculin

treatment, but those that are suitable should be treated correctly.

Although it is true that Dr. Spengler now uses his "Immune Substances (I.K.) Treatment" in preference to tuberculin, because, in his opinion, the treatment when used correctly gives better results than tuberculin treatment, yet in these days, when tuberculin is so much discussed, it seems important that Spengler's work on the subject should be carefully studied.—I am, Sir, yours faithfully,

H. WM. GODFREY, M.B. Aberd.

Frinton-on-Sea, Jan. 16th, 1912.

THE MEETING OF THE CANADIAN PUBLIC HEALTH ASSOCIATION IN MONTREAL.

(FROM OUR SPECIAL CORRESPONDENT.)

(Concluded from p. 136.)

PERHAPS the most important, as well as the most genuinely interesting, of all the meetings was that of the second general session, when a symposium on Town-planning and Housing was held.

Town Planning and Housing.

Dr. CHAS. A. HODGETTS (Ottawa), medical adviser to the Commission on Conservation, read the first paper, which dealt with town-planning and housing. Dr. Hodgetts was by no means complimentary to the manner in which most of the towns of Canada are planned or built. He said that the lumber town of 40 years ago was still a lumber town. It had not risen to a realisation of its importance or to the dignity of its position as the Federal capital of a great and growing nation. He also adversely criticised the planning and housing facilities of Montreal.

Dr. J. E. LABERGE, assistant city medical health officer of Montreal, discussed the matter from the hygienic standpoint.

Dr. CHAS. J. C. O. HASTINGS, medical officer of health of Toronto, read a paper on housing problems in which he described the insanitary conditions existing in the slum districts of New York, Milwaukee, and Toronto. He pointed out that Toronto had its slums, and it was of no avail to attempt to disguise the fact. They must wake up, as other cities were waking up, to prevailing conditions and not live in a "fool's paradise." In Toronto, he said, there were 919 families living under distinctly insanitary conditions, some only in one-room tenements or in cellars. Tenement houses he declared to be nothing more or less than mere human "packing houses," and he concluded by urging the securing of transport facilities to districts on the outside of cities, where people could be properly housed in individual homes in beautiful garden cities.

Mr. W. D. LIGHTALL, K.C., spoke on the subject of Re-housing in Canada, and severely censured the apathetic attitude of municipalities and citizens towards the disgraceful conditions with regard to housing that prevail in many cities of Canada.

Ventilation of Private Houses.

In the Section of Sanitary Engineers and Architects among several papers of interest read was one by Mr. T. W. LUDLOW, Professor of Architecture, McGill University, on Natural Ventilation Applied to Private Houses. Professor Ludlow said that it was no unusual thing in Montreal and elsewhere in Canada to find the houses sealed against all possible ventilation by double windows screwed tightly to the inner sash. The so-called ventilating devices were worse than useless, especially when they were carefully covered over with strips of paper. Since the advent of the radiator-heating system ventilation had become a negligible quantity in dwellings owing to the absence of the old-fashioned open fire-place with a chimney for each room.

Conditions in Canadian Cities.

In the same section Mr. RAWSON GARDNER, President of the Architects' Association of Montreal, discussed conditions existing or arising in Canadian cities. Mr. Gardner said that the invasion of Canada by such a multitude of foreigners tended to create congestion and slums, a tendency that was augmented by the cold winters experienced in Canada. But light and air were a *sine quâ non* for each individual. He suggested that houses should be built around four sides of a block, with an inner courtyard for a playground and for flowers. He also thought that there should be a beautiful driveway extending along the bank of the St. Lawrence, from the rapids to the Victoria Bridge, connecting with the proposed boulevard along the aqueduct, and this in turn should be linked with the Mount Royal Park Boulevard. There was no necessity for any shack town on the edges of the city, and he looked forward to the establishment of garden cities about Montreal similar to those in England and Germany.

Biological Sewage Disposal.

The last general session of the meeting was the most instructive from a scientific standpoint, being devoted to a symposium on Biological Sewage Disposal.

Dr. P. H. BRYCE (Ottawa), chief medical officer of the Department of the Interior, dealt with the physical and economic aspects of biological sewage disposal.

Mr. T. AIRD MURRAY (Toronto), in treating of the engineering problems involved in biological methods of sewage disposal, described the mode of sewage disposal designed by himself at Lethbridge in order to secure the maximum removal of suspended solids, and said that the most that had been done was to secure an effluent that could easily and economically be rendered non-pathogenic.

Dr. J. A. AMYOT, Professor of Hygiene at Toronto University, discussed the bacterial problems involved in biological methods of sewage disposal. He said that two methods were ordinarily employed for this purpose, the anaerobic and the oxidation, of which the oxidation method was by far more satisfactory, but even with it it was utterly impossible to secure any system in the results. The engineer must decide the exact way in which the system should be worked. Dr. Amyot said that slow sand filtration was not enough to depend on. Disinfection also must be employed.

Dr. G. G. NASMYTH (Toronto) read a paper on the Chemical Principles of Sewage Disposal Methods. He said he believed that the trickling filter system from the point of view of economy and success had come to stay, as this system was in line with the methods of nature.

Election of Officers.—Success of the Meeting.

The new officers elected are as follows: President, Dr. C. A. Hodgetts (Ottawa); Vice-Presidents, Dr. M. M. Seymour (Regina, Saskatchewan), Dr. J. W. S. McCullough (Toronto), Dr. E. Bayard Fisher (Fredericton); general secretary, Major Lorne Drum (Ottawa); treasurer, Dr. G. D. Porter (Toronto). As before, the Executive Council is composed of eminent health officers from every part of the Dominion. The next place of meeting will be Toronto.

The Public Health Association has begun in most favourable circumstances and its future success seems to be assured. From scientific, practical, and social view-points this meeting was successful in a high degree, largely owing to the forethought and energy displayed by its late President, Dr. Starkey, and by the general secretary, Major Lorne Drum, and to the fact that His Royal Highness the Governor-General took such a keen interest in the proceedings from beginning to end. As an example of the concern for the success of the meeting, His Royal Highness on the morning of Dec. 14th paid an informal visit to the medical building of the McGill University, in which the meetings of the sections were held, by the courtesy of the Dean and Faculty of the University, and visited all the sections. It may also be said that membership of the Canadian Public Health Association is not confined to medical men: members of the laity are welcomed, as it is recognised that for such an association to do efficient work it must have the intelligent coöperation of the community at large.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN (UNIVERSITY OF LONDON).—The council has appointed Dr. Frederick Ransom internal examiner in pharmacology for the University of Cambridge, late assistant to Professor Behring and Professor Hans Meyer, to be lecturer and head of the Department of Pharmacology.—The examination for entrance scholarships will be held on May 28th and two days following. Forms of entrance and all particulars can be obtained on application to the secretary and warden.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Appeal of the Royal Infirmary against Assessment of its Glanydon Premises.

THE board of management of the Royal Infirmary has appealed against the assessment by the Conway Union regarding Glanydon Convalescent House. The case was heard at the Denbighshire Quarter Sessions at Ruthin and judgment was delivered on Jan. 6th. There were two lots of premises concerned in the appeal—those of Old Glanydon and those of New Glanydon. As regards Old Glanydon, these were originally assessed at £230 gross and £184 net, but these figures were afterwards reduced by the assessment committee to £200 and £160. On this part of their case the appellants failed. In the case of New Glanydon, there was, said the chairman, an important principle in question. The respondents contended that the cost of construction must be the measure by which the amount of assessment should be arrived at. The court was unable to adopt that view. It was quite impossible to apply the principle universally. There had been extra cost in order not to destroy the amenities of the locality. In other cases considerable expenditure had been incurred in buildings of this kind in order to conform with local by-laws. The appellants' case was that the original cost of construction must be entirely left out and that the court was only concerned with what rent a hypothetical tenant would be willing to pay for the premises. The court, again, could not adopt that view. They took, however, the original cost of the premises as a starting point, and with the other evidence to guide them endeavoured to arrive at a fair and reasonable assessment. The appellants succeeded and the assessment was reduced from £800 gross to £545, and from £640 net to £436. The court also decided that the respondents must pay the appellents' costs in the appeal, excluding such costs as related solely to Old Glanydon.

The Need for School Clinics.

Attempts are being made around Manchester to arouse interest in the question of the need for school clinics. At a meeting of the Women's Labour League recently held in Middleton a resolution was passed calling upon the Government to set aside a grant of £1,000,000 for the establishment of school clinics.

Charitable Bequests amounting to £26,000.

The late Mr. James Wilcock, of Blackburn, the chairman of the Refuge Assurance Committee, who died a few days ago, left £26,050 to charities as follows: Endowment fund of Blackburn branch of the new Charity Organisation Society, £5000; Imperial Cancer Research Fund (to which he gave £1000 in his lifetime), £4000; Blackburn and East Lancashire Infirmary, £2000; Blackburn Orphanage, £2000; Edgworth Home for Children, £2000; Blackburn and District Nursing Association, £2000; Müller's Orphanage, Bristol, £2000; Blackburn Ragged School, £1000; and lesser sums to a large number of other deserving charities.

Workmen's Compensation: Dependency of Fathers and Brothers: Important Case.

Judge Mellor, K.C., in the Manchester county court on Jan. 12th, gave an important decision on a somewhat novel case under the Workmen's Compensation Act. A painter, resident at Withington, while working on a ladder was thrown to the ground through the ladder slipping. His skull was fractured and he died immediately. Under this Act his father, mother, and five brothers and sisters all sought compensation from the employer on the ground that they had been partially dependent upon the earnings of the deceased. Of the 3 guineas that constituted the total income of the family per week, the deceased contributed regularly £1. It was contended that as the father was 54 years of age, and could not get work so readily, the family was really more dependent on the deceased than upon the father. It appears that a decision given by the Scottish courts held that those members of a family who were not working must be regarded as dependent on those who did earn wages, and it was therefore contended that in this case the father and some of the children were not legally entitled to compensation. The judge said that the question of total or partial dependency was a matter of fact and not of law. Each case had to be decided entirely on its own merits. He found that there was partial dependency in the case of each claimant, and assessed the compensation at £80, with costs on the higher (B) scale.

Prosecution under the Post Office Act: Improper Circulars.

An important prosecution under the Post Office Act was brought before the Manchester city stipendiary on Jan. 11th, when a young married couple who lived at Bugsworth, Derbyshire, were charged with sending an indecent print through the post on Dec. 21st. Mr. Pearce, who prosecuted on behalf of the Public Prosecutor, said it was alleged that the accused had sent through the post a circular relating to a certain article. The circular he handed to the bench. It was not alleged by the prosecution that there was anything indecent in regard to the mere selling of the article; the prosecution was taken because the circular, which was sent out broadcast, was in its terms improper. The method of conducting the business was an undesirable one. It was alleged that to get in touch with the persons to whom the articles were to be submitted the accused searched for announcements of engagements, and in addition for announcements of births. The allegation was that they sent to the two persons named in the announcements either a letter or one of the circulars produced. For the defence it was not denied that the communications had been sent through the post by the defendants, but it was contended that the circular was not improper. The stipendiary magistrate imposed a fine of £20 and 10 guineas costs on the male defendant, and £10 without costs on the female defendant, and in doing so he said the public ought to be protected from having their breakfast tables contaminated in the way described. He was satisfied that the defendants had been sending out the circulars, uninvited, to unmarried men and women. He had no power to send defendants to prison, though he was not at all sure that prison was not the proper penalty for an offence of that kind.

Jan. 16th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday in Liverpool.

ON Sunday, Jan. 14th, the collections in the various places of worship on behalf of the Hospital Sunday Fund took place. The weather, as in the past few years, was most unpropitious, wet and fog prevailing. The result was very disappointing, nearly all the collections showing a marked decrease. The Ullet-road Unitarian Church heads the list with a total of £575, as against £687 last year. Sefton Park Presbyterian Church comes second with £358, compared with £528 last year. Decreases all round were unfortunately experienced. The problem which confronts the Hospital Sunday Committee arises from the fact that, whilst the requirements of the hospitals are ever increasing, the annual church collections appear to be gradually shrinking. At all events, this has been the case during the last four years. This year an innovation has been made in the mode of collection. Some 6000 small "Red Cross envelopes" have been issued to facilitate the receipt of contributions from those who were sick or who for other reasons were unable to attend the churches on the day of collection. The result of this new arrangement may improve matters somewhat; at least, the committee has hopes of an improvement later, when the envelopes are returned.

Death of Mr. James Taylor, F.R.C.S.

The death occurred of Mr. James Taylor, of Chester, on Jan. 14th, at the age of 72 years. The deceased was highly esteemed in Chester, where he had been in practice since the "seventies." He was formerly honorary surgeon to the Chester General Infirmary, and held many honorary offices in connexion with his profession. He was an ex-President of the Lancashire and Cheshire Branch of the British Medical Association, and also held honorary offices in connexion with the North of England Obstetrical and Gynæcological Society. He obtained the Fellowship of the Royal College of Surgeons of England in 1882. He was also a justice of the peace for the city of Chester, of which he was a prominent citizen. The funeral took place on

Wednesday at Chester Cemetery, the first part of the service being held at St. John's Church. It was characteristic of his thought for others that on the morning of the day of his death he expressed the wish that if the day of his funeral should be cold or wet any friends who stood round the grave-side should be told to keep their hats on.

Jan. 16th.

BRISTOL AND THE WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

University Colston Society, Bristol.

THE thirteenth annual dinner, presided over by Sir Isambard Owen, Vice-Chancellor, took place on Jan. 15th in the large hall of the University. The chairman, in proposing "The Pious Memory of Edward Colston," said that the support of research, a task which the society has lately adopted as its chief *raison d'être*, would have commended itself highly to Colston, for research was the very life of a modern university. He said that if the relative narrowness of the available funds were considered, the output of research in Britain was very satisfactory, and the amount of original work being done in Bristol equally so. The treasurer announced that the amount collected during the year was £450. The toast of "The Guest," proposed by Mr. Cyril Norwood, headmaster of Bristol Grammar School, called forth a most interesting speech in reply from Sir A. T. Quiller-Couch. He said he would consider only that side of the University life on which he could speak with knowledge—the romantic side. The University had its charter; let it add one syllable to this, and acquire a character—something to mark off Bristol by itself among the nations. To achieve this a wide outlook was necessary. They must be in line with the general culture of Europe. The formation of hostels, where students might meet to discuss beliefs and disbeliefs, would encourage this diffusion of thought. He said that Bristol had one great asset as a seat of learning—its spirit of romance. He spoke of Bristol as the most romantic city in England, next to Oxford and, perhaps, Cambridge. But antiquity was not the whole secret. They must attract youth, and encourage the free and joyful spirit of youth. Professor Lloyd Morgan, who followed with the toast of "The City of Bristol," made an interesting allusion to the neighbouring Druidical circle at Stanton Drew as a proof that Bristol was a very ancient seat of learning. Mr. Palliser Martin, president of the Chamber of Commerce, pleaded for the establishment of a faculty of commerce; and the Right Hon. Henry Hobhouse, Pro-Chancellor, spoke of the urgent need of encouragement for research in agriculture, such as Bristol University has undertaken, quoting from a letter by Sir William Ramsay in support of his plea. Mr. Hobhouse made the important statement that the Board of Agriculture had undertaken to provide the University with a capital sum of £5000 and an annual income of £3500 to build and endow a department of agriculture, provided a capital sum of £5000 was raised locally. The new president, Mr. Henry H. Wills, was introduced to the chair, and the proceedings came to an end.

Bristol Dispensary.

At the annual meeting of the Bristol Dispensary held recently at the central premises of the institution, an increase of work was recorded, the total number of new patients during 1911 being 13,086, an advance of 1412 on 1910. The midwifery notes, of which 728 were used, also showed an increase of 40 over the preceding year. Medical aid had been necessary in 40 confinement cases. The number of subscribers was larger by a considerable margin than in previous years, and this, together with an increase in the sale of notes and several substantial legacies and donations, has placed the dispensary in a satisfactory financial position. Mr. Fenwick Richards, the chairman, in commenting on the secretary's report, said that some falling off in the subscription list would be almost inevitable in 1912, owing to the introduction of the Insurance Act.

Bristol Medical Charities.

During 1911 the employees of Messrs. J. S. Fry and Sons collected £703 for the various medical charities of Bristol. The employees of Messrs. W. D. and H. O. Wills's branch of the Imperial Tobacco Company, Limited, at Bedminster, during 1911 collected £785 for the Bristol medical charities.

Sanitary Inspectors' Association.

A meeting of the South-Western branch of the Sanitary Inspectors' Association was held at the Guildhall, Bristol, on Jan. 13th. There was a good attendance. Mr. T. J. Crofts read a paper on Public Administration and its Problems. Mr. G. H. Gibson, in a paper on Housing and Overcrowding in the Smaller Districts, stated that the evils of overcrowding are as acute and far-reaching in smaller districts as they are in the slums of the great cities.

The Proposed Memorial Hospital to the late Sir Charles Dilke.

A meeting was recently held at Cinderford in connexion with the proposed memorial hospital to the late Sir Charles Dilke, and a subcommittee was appointed to prepare a practical scheme. Since then an admirer of the deceased baronet, who is anxious that the original proposal of a hospital should be carried out, has offered to defray half the cost of the erection of such an institution provided that the other half is raised by subscription. This practically settles the form that the memorial should take. About £1500 have been already subscribed, and as there has long been a desire locally for the provision of a general hospital in the Forest of Dean, there is no doubt but that the necessary sum will soon be obtained.

Refusal to Form an Insurance Panel.

At a meeting held under the auspices of the South-Western Branch of the British Medical Association at Exeter on Jan. 11th, attended by nearly 100 members of the medical profession practising in Devon and Cornwall, it was unanimously resolved to refuse to form a panel under the Insurance Act unless the six cardinal points are guaranteed by the Insurance Commissioners.

Proposed Crèche for Plymouth.

At a meeting convened last week by the Mayor and Mayoress of Plymouth it was decided to formulate a scheme for the installation of a day-nursery where poor mothers could leave their children when they went out to work. A provisional committee was appointed, and about £200 were contributed for the object.

The Question of Free Medical Treatment of School Children.

At the last meeting of the Salisbury Education Committee it was suggested that a "full-time" medical officer should be employed to treat the school children at the public expense. The vice-chairman, in reply, stated that in Salisbury there had been formed "care committees," and when a child was reported by the school medical officer to be in bad health steps were taken to impress on the parents the desirability of providing medical treatment. The results obtained had been most satisfactory, and the proposed appointment was unnecessary. The vice-chairman added that neither the Wilts County Committee nor the Salisbury Education Committee had as yet decided to provide free treatment for ailments reported upon in the course of medical inspection.

Whole-time Medical Appointments.

At a meeting of the St. Austell (Cornwall) board of guardians, held on Jan. 12th, much discussion took place over the recommendation from the general purposes committee and the district council that a whole-time medical officer should be appointed to perform the duties of medical officer to the workhouse and scattered homes, medical officer for the seventh district, and medical officer of health for the St. Austell urban and rural districts. The proposed appointment was to be for three years, at a salary of £400 per annum, exclusive of travelling expenses and drugs. Eventually it was decided to adjourn the question. The clerk stated that the Local Government Board was in favour of the appointment of a medical officer of health who was not engaged in private practice.

Death of Mr. Francis William Stowe Wicksteed, M.R.C.S. Eng., L.S.A.

Mr. Francis W. S. Wicksteed died at 3, Royal-terrace, Weston-super-Mare, on Jan. 8th, in his 71st year, from pneumonia, after a short illness. Mr. Wicksteed was the son of the late Mr. Henry Wicksteed, of Maidstone, and received his medical education at St. Bartholomew's Hospital, London, qualifying as M.R.C.S. Eng. and L.S.A. in 1863.

He went to Weston-super-Mare and was for some time in partnership with the late Dr. E. Martin. He had an extensive practice there and was extremely popular, being always a generous supporter of any movement for improvement. He was the first to promote a fine art exhibition in the town. Mr. Wicksteed was formerly consulting surgeon to the local hospital and was at one time the representative of the ratepayers on the old board of town commissioners. He was also an ardent Freemason and a large subscriber to Masonic charities. A good sportsman, he was in his earlier days a follower of the foxhounds. He was one of the first officers of the Royal Naval Reserve to be accepted for service at the front during the Boer war, but a serious attack of pneumonia prevented him from going to South Africa. Mr. Wicksteed retired from practice about 17 years ago and went to live in London, but he never lost interest in Weston-super-Mare, and visited the town frequently. Only a few days before his death he was at the banquet marking the installation of Dr. H. S. Ballance as Worshipful Master of St. Kew Lodge of Freemasons. Much sympathy is felt at Weston-super-Mare for his widow and five children. The funeral took place at Weston-super-Mare on Jan. 12th, the majority of the local members of the medical profession being present.

Jan. 16th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act: the Scottish Central Committee.

IT is hoped that there will soon be a conference between representatives of the medical corporations, representatives of the Universities, and representatives of the Scottish Committee of the British Medical Association, the object being that some common line of policy for the medical profession may be recommended for adoption. I understand that the conference may take place on Saturday next, and that its general object will be, as already stated in these columns, to form a Central Committee to deal with the Act in Scotland. For this purpose the Scottish Committee of the British Medical Association has been given autonomy.

Food Adulteration.

The annual report of the analytical chemist of the corporation of Glasgow has just been issued, and contains much that is interesting from the public point of view. Dealing with the Sale of Food and Drugs Act some commendable suggestions are made in the report. It is stated that owing to the new and ingenious methods of food manipulation that are constantly coming to light the task of the conscientious analyst is one of ever-increasing difficulty. In the United States, the British Colonies, and continental countries an authoritative opinion is soon obtainable as to new methods of food manipulation and the procedure to be followed, but this is not the case in Great Britain. During the *régime* of the present President of the Local Government Board a more enlightened policy was inaugurated, resulting in the publication of exhaustive and instructive reports, many of which suggested permissible limits for foreign matter in certain classes of foodstuffs. Unfortunately these recommendations were rendered ineffective because they lacked the official imprimatur either of the Government or the Local Government Board, and consequently in the law courts were regarded only as an expression of opinion. What is urgently needed, according to the report, is to establish a board of reference, thoroughly representative of the scientific and commercial interests involved, whose decisions should, after due notice, become law. This procedure was recommended by a Select Committee on Food Adulteration as far back as 1896, and has been endorsed and advocated time and again by all classes of the community interested in this important question. Apart altogether from the uniformity in procedure which would result from the establishment of such a board, an inestimable advantage would be the early notification of new forms of adulteration, which, under existing conditions, are often in operation a considerable time before their presence is even suspected by the analyst, much less detected.

Royal Samaritan Hospital for Women, Glasgow.

Last week new buildings in connexion with this hospital were opened by the Hon. Elsie Corbett, daughter of Lord Rowallan, chairman of the governing body. The new buildings consist of a heating and power adjunct and a laundry. Lord Rowallan, who presided, stated that the new buildings, which cost £5000, had been opened free of debt through the kindness of friends. The directors are asking for £10,000 for further necessary extension of the hospital, including a pathological laboratory.

Insanity Statistics in Glasgow.

According to the report of Mr. John Carswell, certifying physician in lunacy to Glasgow parish council, during the past year there were certified as insane in the city 330 males and 293 females. Only in the year 1907, when 332 males were certified, has this number of males been exceeded, while the number of females is the highest on record. Of the total, however, there were 179 who had previously been under certificate. This means that 444 were certified for the first time, and this gives the true estimate of the occurrence of insanity. This number is very slightly over the number for the past three years. The proportion per 100,000 of the population is 76 9, which is the highest recorded, though it has varied but slightly since 1907, when it was 73·6. Investigations into the question of age show that the occurrence of insanity between 15 and 45 is not increasing, whereas at ages over 45 it shows a tendency to increase.

Gray's Hospital, Elgin.

About a year ago Lord Mount Stephen promised a donation of £5000 to the Gray's Hospital, Elgin, on condition that a like sum was collected by the hospital trustees. Up to date £3434 19*s.* 8*d.* of this sum have been subscribed.

Medical Inspection of School Children in Banffshire.

At a meeting of the secondary education committee of the County of Banff, held in Banff on Jan. 15th, Dr. Alexander Grant was appointed medical inspector of school children for the county.

Aberdeen Royal Infirmary: Hospital Sunday Collections.

The annual church collections on behalf of the Aberdeen Royal Infirmary were made on Jan. 7th in most of the churches in Aberdeen. The total amount collected was over £820. The sum collected in the Established churches amounted to very nearly £400 and in the United Free churches to nearly £350. A few churches have not as yet sent in their returns and in several churches the collection was not taken. So far as results go, they appear to be very much on a level with those of last year.

Aberdeen Royal Infirmary and Asylum Managers.

A statutory joint meeting of the Aberdeen Royal Infirmary and Royal Asylum Boards was held on Jan. 12th. The clerk read a summary showing that in the course of the past year 27 life managers had died and 92 had been admitted. The roll for the current year consists of 32 managers (*ex-officiis*), 933 life managers, 36 nominees of congregations, 20 nominees of employees in public works, &c., 59 nominees of districts and parishes, 10 nominees of presbyteries, &c., 61 annual subscribers (exclusive of those who are life managers), making the total membership of the corporation 1151.

Death of the Matron of Aberdeen Royal Infirmary.

The death took place on Jan. 6th of Miss Grace Macnaughton, matron of the Aberdeen Royal Infirmary. Miss Macnaughton was born in Crieff and received her training as a nurse at the Edinburgh Royal Infirmary. For a time she acted as sister in the ward of Professor W. S. Greenfield. In April, 1898, she was appointed matron of the Aberdeen Royal Infirmary, and the duties of that office she faithfully discharged until within a short time of her death. The funeral took place on Jan. 10th.

Jan. 16th.

GUARDIANS AND DISTRICT MEDICAL OFFICERS.—The Honiton (Devon) board of guardians at a recent meeting discussed some alleged complaint against one of their district medical officers, when one of the members is reported to have said: "The board when appointing medical men should lay it down that they must attend urgent cases without an order, and without a patient being necessarily a pauper"

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Emigration.

THE emigrants who left Irish ports in 1911 were 1884 fewer in number than those of the preceding year, the numbers being 32,457 in 1910 and 30,573 in 1911.

The Women's National Health Association and the Insurance Act.

The latest development in connexion with the Insurance Act in Ireland has arisen from the action of the Women's National Health Association. It seems than on Jan. 6th, at an important meeting convened by the Women's National Health Association of Ireland and held at Ely House, Dublin, it was unanimously decided to form a section to be known as "The National Health Insurance Society," which should be competent to become an approved society under the Insurance Act. It was also decided to recommend all the branches of the association to organise meetings locally, to which delegates would be sent for the purpose of explaining the provisions of the Act. It was pointed out that this insurance section would carry on its operations quite apart from the ordinary work of the Women's National Health Association, and would have its own offices and agents. The honorary members of the branches would not have this work thrown on them, and they and the branch committees were asked only to help in organising preliminary meetings and circulating literature which contained correct information regarding the Act, and to obtain the insuranee of as many men and women as possible for the Women's National Health Association Insurance Section. By so doing the position and influence of the association would be greatly improved, and if the new section should obtain large funds by the adhesion of many thousands of members, it would be in a position to give contributions to the Women's National Health Association, in addition to giving extra benefits to its members. It was further pointed out that it would be to the advantage of the society to get as many strong and healthy people to join as possible. So far back as May, 1911, an advisory committee consisting of Sir J. B. Dougherty, Mr. T. W. Russell, M.P., Sir Henry Robinson, the Earl of Carrick, Sir John Lynch, Mr. W. M. Murphy, Mr. G. Dougherty, and Sir William J. Thompson, the Registrar-General for Ireland, was appointed at a council meeting of the Women's National Health Association to give counsel as to what course it should take with regard to its relations to the Insurance Bill, and this committee forwarded to the Women's National Health Association the following resolution which had been passed unanimously:—

That we recommend that the Women's National Health Association should take steps to form an approved society under the Act, provided that it is found, upon inquiry, through the various branches of the association, that a sufficient number of insured persons can be obtained to qualify as an independent society under Section 38, Subsection 1, of the Bill, as introduced into the House of Lords.

The subject was consequently brought before the annual meeting of the Clonmel branch of the Women's National Health Association on Jan. 9th, when by 17 votes to 4 it was decided to leave the matter alone altogether, the feeling being that there were many benefit societies in Clonmel which the people might join if they liked, and that if the association launched into another undertaking it would drift away from what it was originally established for. At a meeting of the Belfast branch held on Jan. 13th a resolution was passed by a large majority not to take any action in relation to the Insurance Act, the branch being only a health organisation. On Jan. 12th, at Queenstown, the branch of the Women's National Health Association, by a considerable majority, decided to keep to their health work and not to touch the Insurance Act; while at the Cork branch, the matter was discussed, but was adjourned for further consideration.

The Belfast Medical Guild.

At a meeting held in the Medical Institute on Dec. 7th, 1911, it was decided to form an association, to be called "The Belfast Medical Guild," and a committee was appointed to draw up a constitution and submit the same for approval or amendment at the next general meeting. This has been now done, and a general meeting will be held in the Medical Institute, Belfast, on Wednesday next, Jan. 24th, to approve or to amend the draft of the constitution which has now been circulated amongst the medical practitioners of Belfast. The committee who have drawn up the constitution and by-laws of this new medical association have, they say in a covering letter to their medical brethren, been much impressed with the serious position in which general practitioners are now placed by the passing of the Insurance Act, and all feel that disastrous results can be averted only by a firm determination to combine and to stick loyally together to the end. It is only by such united action that they can have the slightest chance of fair play in the contest with the forces that seem now to be united against the members of the medical profession.

Typhoid Fever in Omagh.

There are at present 18 cases of typhoid fever in the Omagh fever hospital, seven having been admitted during the week ending Jan 13th.

Jan. 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Will of Professor Lannelongue.

Professor Lannelongue, whose death I notified a fortnight ago, in his will appoints M. Armand Fallières, President of the French Republic, his executor. The sum of 700,000 francs is left to the Institution for the Protection and Rehabilitation of Young Girls, in addition to the legacies already made, to come into operation after the death of Madame Lannelongue. To the local society of medical men of Gers an annuity of 1500 francs has been left for physicians in distress or for their widows. This disposition completes a donation, made by Professor Lannelongue during his life, to the General Association of French Medical Men, of which for many years he was President. To the University of Paris Professor Lannelongue leaves an annual sum of 500 francs to be used as the council shall decide. To the Faculty of Medicine of Paris he leaves a like annual sum of 500 francs for medical students in necessitous circumstances. To each of the "bureaux de bienfaisance" of Auch, Condom, and Castera-Verduzan, he leaves an annuity of 1200 francs. The commune of Castera-Verduzan benefits also by numerous legacies to assist the completion of the work undertaken by its mayor. The impetus given by Professor Lannelongue to the thermal springs of this locality is well known, springs that in the time of the Romans enjoyed considerable repute. All the professor's residuary fortune, after the payment of bequests, legacies, and charges, is to be devoted to the establishment in France of some important international or national work of a social or scientific character.

Treatment of the Oriental Boil (Bouton d'Orient) by Methylene Blue.

At the last meeting of the Society of Tropical Pathology M. Cardamatis and M. Melissidis recommended the use of methylene blue in Oriental boil in the following manner: Morning and evening a thick layer of methylene blue ointment is applied. This treatment is continued for from 15 to 20 or even (exceptionally) 30 days. At the outset of the treatment a slight irritation of the boil covered with the pomade is observed, as well as an increase in the amount of fluid secreted by the ulcerated surface. After 15 days of this treatment the boils are washed with soap-and-water and the patient is kept under observation for from 15 to 20 days further until the cure is complete. Only three cases have been thus treated so far, but according to the authors the results have been remarkable. The boils were cured completely and the resulting scars covered with sound skin. The first signs of cure were manifested about 10 days after the commencement of the treatment, and consisted in a diminution of the inflammatory zone surrounding each boil, subsidence of the swelling, and detachment of the scab from the periphery. After the shedding or accidental detachment of the scab a small superficial ulceration remains, secreting a serous liquid, which cicatrises speedily without the help of the methylene blue ointment. The scars are not

deep and are of a light rose colour, which distinguishes them from those resulting from other treatments.

Gift to the Paris Faculty of Medicine.

The council of the Faculty of Medicine has acknowledged and unanimously accepted a gift of 100,000 francs made to its dean. The donor is a medical man who has preserved the strictest anonymity. The proceeds of the 100,000 francs invested in the State Three per Cents. are to be expended in the best interests of the students of the Faculty of Medicine of the University of Paris. The distribution is to be made yearly, in a lump sum or divided, according to the candidature, among: students distinguished for their devotion to patients as shown by conduct in epidemics or on missions; students distinguished in medicine by discoveries, invention of clinical or laboratory methods, &c.; poor and deserving students, to whom exhibitions are to be given to defray the expense of curriculum, examinations, instruments, apparatus, journeys of scientific education in France or abroad, and so forth.

Reports on Public Health and the Hygiene of Dwellings.

On Jan. 9th the Academy of Medicine heard a communication from M. Mesureur, who is a candidate for the chair left vacant by the death of M. Henri Monod, late Director-General of Public Assistance. M. Mesureur discussed the public health reports and the hygiene of dwellings. He thinks that the insanitation of towns depends largely on that of the dwelling houses, and he adds that if the labouring class especially occupy unhealthy lodgings in so many cases it is because there are no others for them, as the population is increasing more rapidly than the building of dwellings. In 15 years the proportion, which in Paris was formerly one dwelling for 2·90 inhabitants, is now one for 4. According to M. Bertillon, out of 1,664,000 inhabitants of this class, 340,000 occupy dwellings actually infected. M. Mesureur proposes the demolition of all unhealthy dwellings and the development of building societies for workmen's dwellings. The Public Assistance has largely taken up these enterprises, which return an annual revenue of 3·25 per cent. M. Mesureur also proposes the establishment of a kind of sanitary council before which the tenants and the medical man should be called on to give their opinion.

The Rising of the Seine.

For some days the level of the Seine has again risen, and although there is no immediate reason for inquietude, nevertheless the recollection of the floods of two years ago gives rise to some apprehension as to the future. Already the Parisian boats are unable to continue their complete service, the banks of the Seine are covered with water, and in the suburbs the inhabitants have water in their cellars. In Paris itself many cellars are flooded, and some of the attendant evils are making themselves felt, for telephonic communication is difficult on certain lines on account of the flooding of the cellars of the Guttenberg Exchange. The swollen affluents of the Seine, it is feared, will for a few days yet continue to augment the river, but with fine weather the maximum may be reached without any serious consequences.

Jan. 16th.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

Crime and Suicide in the United States.

NEWSPAPER reports of crime in 23 States during a period of 30 days have been recently analysed and classified. The total population of these States was 51,179,015. In this population in one month 470 violent crimes had been committed, which is 1 in every 108,286, or approximately 9·5 to the million. Taking murders alone, the total of 245 gave in the population 1 in every 208,893, or approximately 4·8 to the million. On a yearly basis this would give 57·6 murders and 114 violent crimes to the million. In this consideration, however, cities like Chicago, Philadelphia, Cleveland, Cincinnati, Boston, and St. Louis were, as far as possible, left out. Mr. Andrew D. White set the murder-rate of the United States for 1910 at 126 to the million. According to the American *Spectator*, the combined suicide-rate of 100 American cities, which was 21·8 per 100,000 population in 1908 and 21 in 1909, fell to 19·7 in 1910. The rate for the City of New York was 18·9. San Francisco had the highest suicide-rate, the yearly average being 52 per 100,000 inhabitants for the period of 1900 to 1909. Suicide has been most frequent during the past 10 years in five cities of California and in Hoboken, N.J., which has a rate of 35 per 100,000.

Increase of Railroad Accidents.

The Public Service Commission has reported that for the month of October last there was a considerable increase in railroad accidents, but a decrease in the number of deaths and serious injuries as compared with the corresponding period of last year. The accidents numbered 5488, against 5302 in October, 1910, and 4447 in October, 1909. There were 19 persons killed and 139 seriously injured, while in 1910 27 were killed and 226 seriously injured.

New Surgeon-General of the Public Health and Marine Hospital Service.

Dr. Rupert Blue and Dr. J. H. White have been named as candidates for the Surgeon-Generalship of the United States Public Health and Marine Hospital Service, vacant by the death of Dr. Wyman. Dr. Blue, who is at present stationed in Hawaii, will be remembered for his great work in San Francisco during the campaign against plague there. Dr. White is at the present time in New Orleans, where he did excellent work a few years back in the yellow fever epidemic. It is said that the appointment has been offered to Dr. Blue.

The American Association for the Conservation of Vision.

This association is an organised and conscious movement complementary to the National Committee on the Prevention of Blindness in the United States, which has developed since the formation of the first definite effort by the appointment of the New York Association for the Blind on June 1st, 1908. Other States that have taken up the matter by the formation of commissions and societies for the prevention of blindness are Maryland, Ohio, Massachusetts, Kentucky, Pennsylvania, Wisconsin, and California. The Russell Sage Foundation created a committee and a national committee on the prevention of blindness to systematise and coördinate the efforts being made in various parts of the country to this end. But a new note was introduced into the work in respect of the many conditions causing impairment of eyesight without necessarily inducing blindness, of which defective illumination and certain industrial processes were the most common. The Association for the Conservation of Vision, which arose to meet these ends, endeavours to secure legislation for better standards of factory illumination, for better protection of the eyes of school children, and so forth. It has inaugurated a general campaign of public education through the magazine and newspaper press.

The New York Medical Journal.

The editorship in chief of the *New York Medical Journal*, vacant by the death of Dr. Frank P. Foster, has been filled by the appointment of Dr. C. E. de M. Sajous, of Philadelphia, as supervising editor, the remainder of the editorial staff remaining unchanged. Dr. Sajous has had a wide editorial experience, and his "Annual of the Universal Medical Sciences," later the "Cyclopædia of Practical Medicine," is well known. Dr. Sajous spent the six years from 1891 in original research work in Paris, of which the outcome was his recently published two volumes on the Internal Secretions and the Principles of Medicine. He will doubtless continue the honourable traditions so long and worthily sustained by the late Dr. Foster and maintain the *New York Medical Journal* in the first rank of American medical journalism.

Action by a Typhoid Carrier against the City of New York.

The cook known throughout America as "Typhoid Mary," it is said, is about to bring an action against the city of New York and the Health Department, claiming damages for being kept in confinement for three years. "Typhoid Mary" was first heard of in 1906, when six members of a household in which she was cook were stricken with typhoid fever. Careful investigations by Dr. Soper as to the cause of the outbreak showed that water and food were not responsible. Dr. Soper, finding that the family had changed cooks about three weeks before, investigated the antecedents of the cook, Mary Mallon. It was found that in almost every house in which she had

worked typhoid fever had broken out, and 26 cases of the disease were laid at her door, although Dr. Soper was able to trace only fragments of her history during ten years. The Health Department could not learn that the woman had ever had typhoid fever, and she was described as a robust, heavily built person. She declares that she never had typhoid fever, and objected strongly to being confined. On the complaint of the Health Department, however, she was incarcerated as a menace to the community, and was released only in February last on the plea of Dr. Lederle that she had been shut up long enough to learn the necessity for taking precautions. Mary Mallon now brings action on the ground that she was unjustly held prisoner, and that since her release she has been unable to follow her trade of cooking, and that her chances of making a living have been greatly reduced. This action gives rise to a very nice point of law: Can a person be properly imprisoned, or rather isolated, on the authority of the health officers on the ground that he is a menace to the community as a probable disseminator of disease? On the principle that the public welfare is the highest law this would appear to be sound practice; yet scarcely enough is known regarding the menace of a "disease-carrier" to make the case of Mary Mallon a desirable precedent. The whole matter will doubtless be thoroughly threshed out in the courts.

The Health Officer of the Port of New York.

As is known to readers of these letters, by a singular flaw in legislation, the health officer of this important port is a State appointed and not a Federal official, although the water highways of the nation are generally under central control. As the annual salary of the post is £2400 it has always been one of great interest to the political "bosses." Dr. Alvah H. Doty has been health officer for over 12 years, and has given universal satisfaction to the public and to his fellow practitioners, but that has not placated his political opponents. Dr. Doty's term expired on Feb. 28th last, and on May 30th following the Governor of the State appointed a commissioner to investigate the methods of the administration. This report has just been issued after an absurd investigation, in which ignorant immigrants were invited to testify concerning methods of treatment. A sample of their testimony was their protest against the "cruelty" of putting young babies out of doors in the coldest weather during their sleeping hours. A meeting was called at the Academy of Medicine on Dec. 13th last of the practitioners of New York to protest against this report, and several hundred attended. Resolutions of confidence in Dr. Doty were adopted and a petition to the Governor of New York State to maintain him in office was prepared. The Governor, however, has required Dr. Doty's resignation.

Rabies in New York City.

Interesting statistics have been compiled by the Department of Health, which show that the number of persons recommended for the Pasteur treatment after examination by the department was 182 in 1909, 262 in 1910, and 312 for the first eight months of 1911. There were more persons bitten than shown by these figures, since a large number call at the laboratory of their own volition whose cases are investigated but who are not advised to take the Pasteur treatment because the animals that bit them were not rabid. For the months of April, May, June, July, and August of 1911 the number of cases of this character was 236. The New York Pasteur Institute furnishes the information that for the year ending August 1st, 1910, there were 952 consultations for bites inflicted by dogs and cats, while the figures for the ensuing year were 1010. In 1910 377 such animals were examined and 152 positive cases of rabies were found. For the first seven months of the past year 349 animals were examined with 173 positive results. Of the total number of 2462 persons bitten 1743 were children.

War on Infantile Poliomyelitis.

As it is now believed by many observers that infantile paralysis is an infectious disease, communicated in the dust of the sick-room by an ultra-microscopic organism, the Department of Health has taken measures to combat its spread by the appointment of inspectors to all orthopædic hospitals and dispensaries to ensure complete reports of all cases presented. Cases will probably be isolated in the future, and other children in the family will be kept from school. Circulars will be issued giving a summary of our present knowledge of the disease and its treatment, and a minimum quarantine period of six weeks will be instituted. Bedding will be disinfected, and houses in which cases occur will be renovated or fumigated. Physicians will hence-forward be compelled to report all cases coming under the r notice.

Pensions for Nurses.

Mount Sinai Hospital has established a precedent in raising a fund of £12,000 for the use of nurses who have graduated from its training school and have subsequently supported themselves for at least 20 years by their profession. The fund will be administered by a committee of the Alumnæ Association, and it is understood that the latter will not be too strict in its rulings and may occasionally give relief where the full 20 years have not expired.

The City's Pure Food Policy.

The numerous cases of adulteration by retail dealers of common articles of food, as often reported in these letters, have drawn a statement from Health Commissioner Lederle to the effect that the municipal department, together with the State authorities, will never succeed in their efforts till they are empowered to supplement the work of the Federal officials. If this power is not conferred the Federal power will eventually become supreme. The city commissioner has ceased the mere confiscation of the adulterated food and has instituted criminal proceedings in all cases. This has struck fear into violators of the ordinances, who cannot suffer imprisonment without serious financial loss.

An Effort to Fight Insanity.

The State Charities Aid Association has recently issued a booklet, "Why Should Anyone Go Insane?" The sending out of this work is part of a campaign for the purpose of educating the public in the knowledge that insanity is preventable; 24,845 letters have been posted to clergymen, educators, teachers, and others, explaining the causes and prevention of insanity. There are 32,657 insane in the State hospitals, or 1 in every 20 of the adult population. It is hoped to develop the campaign along the lines so successfully followed in the fight against tuberculosis.

The Army Canteen.

Some years ago Congress abolished the army canteen under pressure from an immense number of amiable *a priori* thinkers who maintained that it was wrong for "Uncle Sam to be in the liquor business." A letter has been prepared by Dr. W. W. Keen, of Philadelphia, himself a total abstainer and non-smoker, and signed by 275 of the most prominent practitioners in the country, praying Congress to restore the soldiers' club. Nothing stronger than lager beer was ever sold at the canteen, together with tobacco and certain food delicacies. The profits were applied to the soldiers' mess. Since the abolition of the canteen drunkenness, desertions, and especially venereal disease, have been extremely prevalent and constitute a serious menace to the army. The canteen was immediately replaced by a circle of "dives" of the worst description, where adulterated whisky was sold to the men, who were then robbed by the diseased females who haunted these places. According to the report of Surgeon-Genera Torrey, the disease peril has come to outweigh in importance any other sanitary question which now confronts the army, and neither our national optimism nor the Anglo-Saxon disposition to ignore a subject which is offensive to the public can longer excuse us from facing the problem.

Dr. C. H. Mayo's Health.

Dr. Charles H. Mayo, one of the well-known Mayo brothers, whose surgical clinic at Rochester, Minnesota, has become a veritable Mecca for medical pilgrims of all nationalities, has had to undergo abdominal section twice within a week. On Dec. 15th last he was taken suddenly ill in New York with appendicitis and was operated on at the Presbyterian Hospital by Dr. Joseph A. Blake, a gangrenous appendix being removed. On the 22nd symptoms of acute cholecystitis set in, and he was again operated on and a number of gall-stones were removed. He has progressed favourably.

Jan. 6th.

THE NATIONAL INSURANCE ACT.

THE COUNCIL OF THE BRITISH MEDICAL ASSOCIATION.

A SPECIAL meeting of the Council of the British Medical Association was held at 429, Strand, London, on Wednesday afternoon, Jan. 17th. A largely signed requisition was before them from the members of the Association that an extraordinary general meeting of the whole constituency should be held to consider the position of the profession under the National Insurance Act. It is well known that the authorities of the Association consider that such an extraordinary general meeting of the whole body would be out of order on the particular proposition, but no definite statement as to the decision of the Council has been made public.

BRITISH MEDICAL ASSOCIATION REFORM COMMITTEE.

The Reform Committee, which came into being on Jan. 9th at the meeting of medical men in the Hammersmith Town-hall, has issued the following manifesto:—

To the Members of the Medical Profession in General and of the British Medical Association in Particular,—

The Provisional Executive of the British Medical Association Reform Committee, appointed by resolution at a public meeting of the profession held at the Hammersmith Town-hall on Tuesday, Jan. 9th, 1912, wishes to publish the following as an outline of its objects and policy.

1. This Committee exists solely for the purpose of enforcing the avowed policy of the British Medical Association in contra-distinction to the weakened version thereof expressed in the circular letter to Representatives under date Dec. 9th, 1911, which was signed by the chairman of Representative Meeting and chairman of Council, and will only continue to exist until the interests of the medical profession under the National Insurance Act, 1911, are adequately safeguarded without evasion, equivocation, or mental reservation of any kind.

2. The Committee is of opinion that the best method of obtaining this end is by the promotion of an Act of Parliament, through the British Medical Association, amending the National Insurance Act, 1911, in such a manner as will embody as a minimum the six-point programme of the British Medical Association. This opinion of the Committee is directly opposed to that of the existing Council of the British Medical Association—namely, that matters may now be left in the hands of the Commissioners to be dealt with in their regulations.

3. The Committee is of opinion that in its recent negotiations with the Government the existing Council of the Association has allowed itself to be too much influenced by political considerations, and by so doing have endangered the interests of the medical profession, and the Committee is further of opinion that the "ending or mending" of the present Council is the only method by which the confidence of the members of the British Medical Association in their official leaders can be restored.

4. In order to reform the existing Council the Committee suggests the enrolment in the Reform Committee of sufficient members in each division and branch as to ensure that a Representative be returned either to the Representative Body or to the Council who shall be in sympathy with, and will pledge himself to vote for, the policy laid down in the foregoing paragraphs. It also suggests the establishment of an Executive Committee in London composed of delegates of divisions to control the business and finances of the Reform Committee.

5. The Provisional Executive suggests that the Reform Committee should confer as soon as possible with all or any of the present medical organisations which have been formed for the purpose of dealing with the situation created by the Act, with a view to union.

6. The Committee is of opinion that every member of the profession should be a member of the British Medical Association, and urges every member of the Reform Committee to use their best endeavours to obtain new members and to persuade existing members to continue their membership.

The Reform Committee invites members of the British Medical Association who are in sympathy with the policy as set forth above to assist in the establishment of branches of the committee in their divisions and to lose no time in communicating with the Honorary Secretary, Provisional Executive Committee, at its offices, 29, Old Queen-street, Westminster, S.W. (Telephone, 1775 Victoria). The chairman is Dr. F. J. Smith, Mr. P. C. Raiment is honorary secretary, and Mr. Wilfrid Travers business manager.

TWO EXPOSITIONS OF THE ACT.

The National Insurance Act, 1911. Being a Treatise on the Scheme of National Health Insurance and Insurance against Unemployment created by that Act, with the Incorporated Enactments, full Explanatory Notes, Tables, and Examples. By ORME CLARKE, of the Inner Temple and Western Circuit, Barrister-at-law. With an Introduction by Sir JOHN SIMON, K.C.V.O., M.P., Solicitor-General. London, Sydney, and Calcutta: Butterworth and Co. 1912. Pp. 491. Price 12*s.* 6*d.*—Mr. Orme Clarke is very early in the field with an informing and lawyer-like commentary upon the National Insurance Act, and his book should before long be in the hands of everyone whose duties or inclinations impel him, we will not say to master so large and complex a subject, but to acquire accurate knowledge of those portions of the Act which immediately concern him. Mr. Clarke admits that the task of writing his treatise in the circumstances in which the Act was passed, and in view of the necessity for early publication, was no easy one, but we hope that, as he suggests, *olim meminisse juvabit.* No doubt when he has supplemented his recent labours by a similar exposition of the regulations now being pondered by the Commissioners he will be able to look back with satisfaction upon what he has accomplished—and decide whether a second edition should wait for the passing of an amending Act. Mr. Clarke acknowledges indebtedness for assistance to a legal colleague, Mr. Colin Smith, and has secured appreciation of his work by the Solicitor-General, who contributes a pregnant introductory note. The form of the book is that familiar to lawyers, and is also one convenient for laymen. An introduction is followed by the Act itself set out in full, with a full explanatory note, distinguished in the printing by a different type, following each section. The usual Tables of Cases and Statutes are inserted at the beginning, and material portions of the Interpretation Act, 1889, will be found at the end. Passing over the introductory summary, which is brief, but which makes tolerably clear the general scope of the Act in case this may have been forgotten, we naturally turn, in a work of this kind, to renew our acquaintance with those sections of the new statute which directly affect the medical profession, and none can do so without being struck at once by the meagreness of the information which they afford, and by the scanty consideration which Parliament was allowed to give to the case of the profession without whose coöperation the Act must remain unworkable. Section 15, which deals with medical benefits, manages to suggest a possible difficulty for which it provides no apparent solution. Insurance committees, as all are aware, are to adopt a system which will secure the right of the insured to select a medical practitioner from a panel to treat him, subject to the consent of the practitioner so selected. But what is to happen when a prospective patient is declined by a practitioner, and when he meets with a similar refusal from all the other members of the panel? According to the section, the system to be adopted must secure "the distribution amongst, and so far as practicable under arrangements made by, the several practitioners whose names are on the lists, of the insured persons who after due notice have failed to make any selection, or who have been refused by the practitioner whom they have selected." Mr. Clarke thus illustrates and speculates upon the situation. "A, B, and C are the practitioners on the list in a given area; D, an insured person in that area, has selected A as his practitioner, but A has refused to have him. Similarly, B and C refuse to have him, and A, B, and C are unable to arrange between themselves who is to take D. D would be one of the persons who would have to be distributed, and in the absence of arrangement between A, B, and C it is submitted that D's right to select would revive, and he would be allocated to A, who in fact had previously refused to have him. It is submitted that the exercise by a practitioner of his right to be placed on the list must carry with it the possibility of the abrogation of his right to refuse to treat any given

patient. *Sed quære* whether in such a case the practitioner is not entitled to persist in his refusal to treat the person in question. If so, *quære* whether the Commissioners may use their powers under the proviso and suspend the person's right to medical benefit?" We venture to question the soundness of Mr. Clarke's first two submissions, and lean rather to his latter two, but the case imagined has been left apparently not provided for, whether by design or owing to the manner in which the Act was passed, and it is one which adds weight to the arguments of those who insist upon a system of payment by fees for work done. The refusals to treat individual cases under a system of payment *per capita* would naturally be more numerous than under the other. However, "*quære*" and "*semble*" are words which the author finds himself frequently obliged to employ in his notes of explanation, and he raises under them a good many interesting questions for meditation and discussion. It may be mentioned that Sir John Simon, in his introduction, makes a very good point in favour of the inclusion of sickness and unemployment insurance in one Act. He says that as capacity to work is a condition without which unemployment benefit is not to be enjoyed, and as incapacity to work is equally a qualification necessary for those seeking sickness benefit, to have passed one half of the Act without the other would have meant either the claiming of unemployment benefit by those whose condition was due to physical incapacity, or the claiming of sick benefit by those in fact unemployed, according to which half of the Act had been allowed to take precedence of the other. The soundness of the argument is what might be expected from the able lawyer who puts it forward, although it must be recollected that Part II. of the Act only applies to certain groups of trades.

Everybody's Guide to the Insurance Act. By THOMAS SMITH, Barrister-at-Law, of the Inner Temple; Joint Author of "Points for Guardians and their Officers." London: Charles Knight and Co., Limited. Pp. 304. Price 1*s.* net.—The enormous number of persons directly affected by the Insurance Act renders the publication of a popular introduction to its provisions opportune, and Mr. Smith's work is, as its title implies, a guide of a popular nature rather than a legal text-book. In form it consists of a series of explanatory articles paraphrasing and commenting upon the Act, with references to the sections dealt with, the Act itself being printed in full without notes at the end of the book. In effect it is calculated to give a good general idea of the new law and of some of the difficulties likely to arise under it, and reference to, and comparison with, the text of the Act will generally show how far the author's version of its provisions is justified. Something more in the nature of a legal treatise will be required by those who desire to get as near to unimpeachable accuracy in their appreciation of details as the complexity of the subject will permit. It is not easy to paraphrase a section or sections of an Act of Parliament and to preserve at the same time their full meaning, especially if condensation is attempted at the same time. Mr. Smith sets out the following as one of three main principles upon which the Insurance Act is founded: "(1) It is founded on compulsion. So far as is possible, all employed persons who do not earn salaries or remuneration exceeding £160 a year are brought within the scheme." This may be correct as far as it goes, but the inclusion of employed persons earning more than £160 a year by manual labour is left to be gathered from the following page. Again, the case of persons refused by the medical practitioner whom they have selected is dealt with by saying "such persons will be distributed as far as possible amongst the medical practitioners on the list." Here "as far as possible" seems to be the author's version of "so far as practicable" in Section 15, Subsection 2 (A), words which there do not govern the distribution, but the making of arrangements for it by the several medical practitioners on the lists. Again, the words "the regulations may provide" occur at the commencement of what we take to be the author's version of Section 15, Subsection 4, which begins "the regulations shall provide." In dealing with the same section the author, we notice, characterises the provisions of Subsection 3 as "effecting a compromise which was apparently acceptable to the medical profession," a statement from which we should differ, even taking into consideration the qualifying adverb "apparently." Nevertheless, as a popular guide or as an introduction to a closer study of the Act Mr. Smith's work should be found useful.

INSURANCE COMMISSIONERS.

For the convenience of our readers we print the full lists of Insurance Commissioners officially appointed by the Treasury:—

English Insurance Commissioners.

Sir Robert L. Morant, K.C.B., chairman.
Mr. J. Smith Whitaker, deputy chairman.
Mr. John Swanwick Bradbury, C.B.
Mr. David James Shackleton.
Mr. James Lister Stead.
Mr. Thomas Neill.
Miss Mona Wilson.
The Chief Registrar of Friendly Societies.

Scottish Insurance Commissioners.

Mr. James Leishman, chairman.
Dr. John Christie McVail, LL.D., deputy chairman.
Mr. John M'Nicol.
Miss Mary Muirhead Paterson.
The Chief Registrar of Friendly Societies.

Irish Insurance Commissioners.

Mr. Joseph Aloysius Glynn, chairman.
Mr. Walter Samuel Kinnear, deputy chairman.
Dr. William Joseph Maguire.
Mrs. Marie Louise Dickie.
The Chief Registrar of Friendly Societies.

Welsh Insurance Commissioners.

Mr. Thomas John Hughes, chairman.
Dr. Harold Meredith Richards, deputy chairman.
Mr. John Rowland, M.V.O.
The Hon. Violet Douglas-Pennant.
The Chief Registrar of Friendly Societies.

Joint Committee.

The Lords Commissioners of the Treasury have also appointed a Joint Committee of the several bodies of Insurance Commissioners as follows:—

Mr. C. F. G. Masterman, M.P., chairman.
Sir Robert Morant, K.C.B., vice-chairman.
The chairmen for the time being of the several bodies of Commissioners *ex officio* members of Committee.
Mr. J. Smith Whitaker.
Mr. J. S. Bradbury, C.B., Chief Registrar of Friendly Societies.
Sir John Struthers, K.C.B.
Mrs. Louise Creighton.

The Joint Committee of Commissioners under the Act have appointed Mr. W. J. Braithwaite secretary and Mr. A. W. Watson chief actuary to the Joint Committee.

Obituary.

EDMUND DOWNES, M.D. BRUX., F.R.C.S. EDIN.

THE death is announced of Dr. Edmund Downes, which occurred at Eastbourne on Jan. 11th. He came of an old Northamptonshire family, and was born at Horton 68 years ago. After leaving school he entered upon a military career, obtaining a commission in the Royal Artillery and served for a few years. The study of medicine, however, had greater attractions for him, and in 1876 he took the M.D. degree at Brussels, and the L.R.C.P. diploma in London. He then offered himself to the Church Missionary Society, and was for some years engaged in the society's Kashmir Medical Mission. In 1882 at Calcutta he read a paper on the subject of the mission at the Decennial Missionary Conference. His health, however, broke down, and he was compelled to return to England. In 1884 he became a Fellow of the Royal College of Surgeons of Edinburgh, and in the same year settled at Eastbourne, where he soon had an extensive practice. While at the Sussex seaside town he centred his principal activities, apart from his profession, in the advancement of religious and philanthropic works. He was very fond of swimming and for 20 years was President of the Eastbourne Swimming Club. It was through ill-health that he retired from this position in December, 1909, and the

members presented him with an artistic illuminated address appreciative of his generous help. Of late years his health completely broke down, and his last serious illness extended over five months. In the early "eighties" Dr. Downes was a frequent contributor to THE LANCET, among his papers being, "Treatment of Acute Osteitis" in 1881; "Operation and Cure of Complete Congenital Occlusion of Os Uteri," in 1882; and "The Use of the Catgut Ligature," in 1883.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Julius Weil, of the Schlachtensee Sanatorium, aged 42.—Dr. Bernhard Schuchardt, for many years chief of the Medical Department of the Ducal Government of Gotha, aged 88. He was a voluminous writer on many subjects—hygiene, geographical pathology, the history of medicine, pharmacology, &c. His son, Karl August Schuchardt, was director of the Stettin Hospital, and had attained to considerable eminence as a surgeon before his death many years ago.—Dr. Kroemer, of Conradstein, Medical Privy Councillor.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Second Professional Examination in Anatomy and Physiology, held on Jan. 4th, 5th, 8th, and 9th, 94 candidates presented themselves, of whom 49 were approved and 45 were rejected. The following are the names of the successful candidates:—

John Paul Adock, Bristol University and University College; Carl Frederick Anthoniaz, Ceylon Medical College and Middlesex Hospital; Mary Elizabeth Ashton, L.M.S. Calcutta, Medical College, Calcutta; Narayan Krishna Bal, L.M.S. Bombay, Bombay University; Percy William Barnden, London Hospital; Zaki Mikhail Bishara, Cairo and London Hospital; Norman Briggs, Leeds University; Marcus Thomas Gonzalez Clegg, B.A. Cantab., Cambridge University; Subramanya Doraisamy, Madras University and Middlesex Hospital; Herman Gerald Dresing, Guy's Hospital; Charles Theodore James Drobig, St. Mary's Hospital; James Angel Durante, London Hospital; Ahmed Fahmi El-Hakim, Cairo and London Hospital; Frederick Ernest Felden, Middlesex Hospital; Hassell Dyer Field, St. Thomas's Hospital; George Cowley Gell, Middlesex Hospital; Lionel Augustine Graham, Guy's Hospital; Alfred Risdon Hacker, Westminster Hospital and King's College; Arthur Herbert Harkness, Guy's Hospital; Frank Cecil Harrison, Sheffield University; Abdel Halim Hilmy, Cairo and St. Thomas's Hospital; Tom Jones, B.A. Cantab., Cambridge University; Charles George Gordon Keane, St. Mary's Hospital; Merlin Kingsley, L.M.S. Calcutta, Calcutta Medical College; Felix Edward Ricardo Laborda, Guy's Hospital; James Arthur Liley, London Hospital; Kambeeranda Carlapa Mandana, Madras University and Middlesex Hospital; Alwyne Harold Manfield, London Hospital; Bhamini Mohan Mitra, Calcutta Medical College and Middlesex Hospital; Newman Frederick Norman, Cambridge University and St. Bartholomew's Hospital; Guy William Parry, St. Bartholomew's Hospital; John Meredydd Parry, University College, Cardiff; Owen Guy Parry-Jones, B.A. Oxon., Guy's Hospital; William Linnell Partridge, Guy's Hospital; Haydu Peters, Middlesex Hospital; Gabriel Francis Rodrigues, Madras University and University College; Harold Arthur Rowell, St. Thomas's Hospital; Adrian St. Johnston, St. Thomas's Hospital; John Thomas Samuel, University College, Cardiff; Noel Humphrey Wykeham Saw, Guy's Hospital; Frederick Gilbert Laughton Scott, B.A. Oxon., Oxford University; William Goodman Shakespeare, King's College; Gerald Davenant Shann, St. George's Hospital and King's College; Edward Benjamin Sunderland, University College; Leonard Hankinson Terry, St. Bartholomew's Hospital; Richard Roland Htoon Oo Tha, University College; Myles Denison Boswell Tonks, London Hospital; Cedric Norman Valsey, Bristol University; and John Rollo Noel Warburton, St. Thomas's Hospital.

At the quarterly examination in Practical Pharmacy, held on Jan. 11th, the following gentlemen were approved:—

George William Macbeath Andrew, Cambridge University and Guy's Hospital; Louis David Cohen, London Hospital; Alfred Beuthin Danby, Guy's Hospital; William Everard Sherard Digby, Guy's Hospital; George Eldridge Dyas, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; William Kelsey Fry, Guy's Hospital; Norman Greilier, L.D.S. Eng., Charing Cross Hospital; Harry James Hoby, New Zealand University and Guy's Hospital; James Evelyn Thoresby Jones, University College Hospital; Arthur Wellington Matthew, London Hospital; Edward Jocelyn Nangle, B.A. Cantab., Cambridge University and St. Mary's Hospital; Leonard Robert Pickett, Guy's Hospital; Arthur Starkie Plant, Manchester University; Frank Pearce Pocock, King's College and Westminster Hospital; Pierre Roux, London Hospital; Ahmad Hussein Samy, St. Bartholomew's Hospital; Alexander Stanger Seabrooke, B.A. Cantab., Cambridge University and Guy's Hospital; Percy Ward, Sheffield University; Clement Arthur Webster, Manchester University; Charles Alexander Weller, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; and Stanley Wickenden, Guy's Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Uhthoff, of Breslau, has been appointed Professor of Ophthalmology, in succession to the late Dr. Michel. Dr. Oskar Huber, Director of the Medical Side of the Augusta Victoria Hospital in Schöneberg, has been granted the title of Professor. An Honorary Professorship has also been conferred on Dr. August von Wassermann, of the Institute of Infectious Diseases, who is so well known in connexion with blood tests.—*Breslau:* Dr. Uhtoff, who has accepted a chair of Ophthalmology in Berlin, has decided to remain in Breslau. Dr. Herman Coenen, Oberarzt of the University Surgical Clinic; and Dr. Alexander Bittorf, Oberarzt of the University Medical Clinic, have been granted the title of Professor.—*Brussels:* Professor Thiriar, the eminent surgeon, is retiring. His post as Director of the First Surgical Clinic has been conferred upon Professor A. Delpage, Dr. J. Verhoogen becoming Director of the Second Surgical Clinic.—*Freiburg:* Dr. Mangold, of Greifswald, has been recognised as *privat-docent* of Physiology.—*Göttingen:* Dr. Werner Rosenthal, *privat-docent* of Hygiene, has been granted the title of Professor; Dr. Eugen Muthmann has been recognised as *privat-docent* of Anatomy.—*Greifswald:* Dr. Martin Kochmann, *privat-docent* of Pharmacology, has been granted the title of Professor.—*Heidelberg:* Dr. Franz Lust has been appointed Oberarzt of the University Children's Clinic in succession to Dr. Tobler.—*Kharkoff:* Dr. Poliakoff, Professor at Dorpat (Iurieff), has been appointed to the chair of Histology.—*Kiel:* Dr. H. Schlecht has been recognised as *privat-docent* of Medicine.—*Königsberg:* The title of Professor has been granted to Dr. Isfried Hofbauer, *privat-docent* of Gynæcology; Dr. Max Draudt and Dr. Rudolf Haecker, Oberärzte of the Surgical Clinic; and Dr. Oskar Ehrhardt, *privat-docent* of Surgery.—*Leipsic:* Dr. Ewald Hering, professor of physiology, has been made a Knight of the Bavarian Maximilian Order.—*Lemberg:* Dr. Stanislas Opolski has been appointed Extraordinary Professor of Chemistry in the Medical Faculty.—*Magdeburg:* Dr. W. Thom, an eminent gynæcologist, has been granted the title of Professor.—*Modena:* Dr. Giovanni Quadri has been recognised as *privat-docent* of Medical Pathology.—*Strasburg:* Dr. Paul Asch, *privat-docent* of Urology, has been granted the title of Professor.—*Wiesbaden:* Dr. Peter Hackenbruch, an eminent surgeon, has been granted the title of Professor.—*Würzburg:* Dr. Ernst Magnus-Alsleben, who followed his chief, Professor D. Gerhardt, from Basle, has been recognised as *privat-docent* of Medicine.

LONGEVITY.—Mr. Edgar Jones, M.R.C.S., of Great Burstead, Essex, who has recently entered his 103rd year, was born at Bristol, and his brother, the late Alderman John Averay Jones, was a former mayor of that city.

OYSTERS AND ENTERIC FEVER.—At the last meeting of the Kingswood (Gloucestershire) urban council the medical officer of health, Mr. C. J. Perrott, reported that two cases of enteric fever, probably due to eating oysters, had been recently reported.

PRESENTATION TO A MEDICAL PRACTITIONER.—At a meeting of members of the Teignmouth (Devon) Corps of the St. John Ambulance Brigade, held on Jan. 11th, Mr. George Herbert Johnson, L.R.C.P., L.M. Edin., M.R.C.S. Eng., was presented with a silver smoker's table-lamp, suitably inscribed, in appreciation of his services as honorary instructor.

WE are informed by the Jeyes' Sanitary Compounds Company, Limited, 64, Cannon-street, E.C., that Dr. E. Klein has accepted the appointment of scientific adviser to the company, and that the coefficient values (by the Rideal-Walker test) of all disinfectants manufactured by them (Jeyes' fluid, cyllin, and corporation fluids) are tested and certified before the goods leave the works.

A SURGEON'S HONORARIUM.—The Brighton guardians recently advertised for a consulting and operating surgeon to the Workhouse Infirmary at an honorarium of 50 guineas per annum. This sum was considered by many medical men to be inadequate for the services required, and a meeting of the local division of the British Medical Association was held on Jan. 12th to consider the position. As no candidate has applied for the post the guardians have now agreed to receive a deputation.

UNIVERSITY COLLEGE, LONDON.—The Page May Memorial Lectures will be delivered this year at University College by Dr. Henry Head, F.R.S., on Fridays, at 5 P.M., beginning on Jan. 26th. The subject will be "The Afferent Nervous System," and the lectures will be open without fee to internal students of the University of London and to other persons interested in the lectures who obtain tickets from the secretary of University College.

DONATIONS AND BEQUESTS.—Under the will of the late Mr. James Lawes Perrin the testator left £2500 to the Bristol Benevolent Institution, and £500 each to the Bristol General Hospital, Bristol Royal Infirmary, Bristol Dispensary, Bristol Hospital for Women, Bristol Eye Hospital, Bristol Deaf and Dumb Institution, Royal Ear Hospital, London, and Swansea Hospital.

MEDICAL BATHS AT TORQUAY.—At the last meeting of the Torquay town council the provision of medical baths, including a swimming bath, was discussed, and it was eventually decided to erect these under expert direction at the Bath Saloons, at an estimated cost of about £15,000.

BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, 41 and 43, Maddox-street, Bond-street, London, W.
The Chemistry of Breadmaking. By James Grant, M.Sc. Tech., F.I.C., F.C.S., Head of the Fermentation Industries Department in the Municipal School of Technology, Manchester. Price 5s. net.

BAILLIÈRE, TINDALL, AND COX, London.
Studies in Pulmonary Tuberculosis, its Dissemination, Specific Diagnosis and Treatment, and Some Points in its Pathology. By Frederick Guy Griffiths, B.A., M.D., Ch.M., Honorary Pathologist and Honorary Assistant Physician, Royal North Shore Hospital of Sydney, and sometime Honorary Acting Pathologist, Sydney Hospital. Price 5s. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.
Some Factors Influencing Health in Tropical and Sub-Tropical Countries. By T. Gerald Garry, M.D., M.A.O., M.Ch. R.U.I. Price 2s. 6d. net.

BRUCE, WILLIAM, 54 and 54A, Lothian-street, Edinburgh.
Surgical Tables. 1911. Price 1s. 6d. net.

CHURCHILL, J. AND A., London.
Diseases of the Stomach, with Special Reference to Treatment. By Charles D. Aaron, Sc.D., M.D., Professor of Gastroenterology and Adjunct Professor of Dietetics in the Detroit College of Medicine. Price 21s. net.
Microbiology. For Agricultural and Domestic Science Students. Edited by Charles E. Marshall, East Lansing, Michigan, Professor of Bacteriology and Hygiene, Michigan Agricultural College. Price 10s. 6d. net.

GREEN, WILLIAM, AND SONS, 2 and 4, St. Giles-street, Edinburgh.
The Law relating to Medical Practitioners and Dentists in Great Britain. By J. N. Morton, M.A., Solicitor, Secretary of the Western Medical School, Glasgow. With an Appendix of Statutes. Price 7s. 6d. net.

HEINEMANN, WILLIAM, 21, Bedford-street, London, W.C.
The Individualisation of Punishment. By Raymond Saleilles, Professor of Comparative Law in the University of Paris and in the College of Social Science. With an Introduction by Gabriel Tarde, late Magistrate in Picardy and Professor of Philosophy in the College of France. Translated from the second French edition by Rachel Szold Jastrow. With an Introduction by Roscoe Pound, Professor of Law in Harvard University. Cash price in Great Britain and Ireland, 16s. net.
A New Logic. By Charles Mercier, M.D., F.R.C.P., F.R.C.S., Physician for Mental Diseases at Charing Cross Hospital; Examiner in Mental Diseases and Psychology in the University of London. Price 10s. net.

KNIGHT, CHARLES, AND CO., LIMITED, 227-229, Tooley-street, London, S.E.
Everybody's Guide to the Insurance Act. By Thomas Smith, Barrister-at-Law, of the Inner Temple; Joint Author of "Points for Guardians and their Officers." Price 1s. net.

LEONARD, W. M., 101, Tremont-street, Boston, U.S.A.
Case Histories in Medicine Illustrating the Diagnosis, Prognosis, and Treatment of Disease. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second edition, revised and enlarged. Price $3.00

LONGMANS, GREEN, AND CO., London, New York, Bombay, and Calcutta.
The Significance of Existence. By I. Harris, M.D. Koenigsberg, L.R.C.P. and S. Price 6s. net.

METHUEN AND CO., LIMITED, 36, Essex-street, London, W.C.
The Alphabet of the National Insurance Act, 1911. By C. G. Moran, of the Inner Temple, Barrister-at-Law. Price 1s. net.

WRIGHT, JOHN, AND SONS, LIMITED, Bristol. SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.
"First Aid" to the Injured and Sick. An Advanced Ambulance Handbook. By F. J. Warwick, B.A., M.B. Cantab., M.R.C.S., L.S.A., A.K.C. Lond., Major, R.A.M.C. (T.), and A. C. Tunstall, M.D., C.M., F.R.C.S., L.R.C.P. Edi., Major, R.A.M.C. (T.) Rtd. Seventh edition, revised. Sixtieth thousand. Price, paper, 1s. net; leather, 2s. 6d. net.
Wright's Improved Physicians' and Surgeons' and Consultants' Visiting List. Compiled by Robert Simpson, L.R.C.P., L.R.C.S. Form A. 1912. Nineteenth edition. Prices from 5s. to 7s. (according to number of patients, 40, 80, 120, 160, 200, 240).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BURD, GEORGE VANHOUSE, L.R.C.P., L.M. Edin., M.R.C.S., has been reappointed Medical Officer of Health for the Northlew District by the Okehampton (Devon) Board of Guardians.

DAWSON, GUY DE H., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Evelina Hospital for Children.

DINGLE, PERCIVAL A., M.R.C.S., L.R.C.P. Lond., has been appointed District Surgeon, Sandakan, British North Borneo.

HARSTON, L. DE C. E., L.R.C.P. Edin., F.R.C.S. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Kingsbridge District of the county of Devon.

HOPPS, HUGH JAMES, M.B., Ch.B. Edin., has been appointed Assistant House Surgeon at the Gloucestershire Royal Infirmary and Eye Institution.

HOSFORD, J. STROUD, F.R.C.S. Edin., has been appointed Honorary Surgeon to the Royal Eye Hospital.

PIGGOTT, F. CECIL H., M.D., B.C. Cantab., has been appointed Medical Officer to the Post Office at Teignmouth.

RANSOM, F., M.D. Edin., has been appointed Lecturer and Head of the Department of Pharmacology in the London School of Medicine for Women.

WILSON, J. DYKES, M.B., Ch.B. Edin., has been appointed House Physician at the Sunderland Infirmary.

Vacancies.

For further information regarding each vacancy reference should made to the advertisement (see Index).

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Resident Surgical Officer. Salary £100 per annum, with apartments, board, and attendance.

BRENTFORD UNION.—Medical Officer for Hounslow District. Salary £175 per annum.

BRISTOL ROYAL INFIRMARY.—House Physician. Salary £100 per annum. Also Obstetric and Ophthalmic House Surgeon. Salary £75 per annum. Also Resident Casualty Officer for six months. Salary at rate of £50 per annum. Each with apartments, board, and laundry.

CAPE TOWN, SOMERSET HOSPITAL.—Assistant Medical Officer. Salary £200 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £75 per annum, with board and washing.

COLCHESTER, ESSEX AND COLCHESTER LUNATIC ASYLUM.—Medical Superintendent. Salary £800 per annum, with house, coals, gas, washing, stabling, &c.

CROYDON COUNTY BOROUGH.—Medical Officer of Health. Salary £600 per annum.

CROYDON GENERAL HOSPITAL.—Junior House Surgeon. Salary £75 per annum, with board, laundry, and residence.

DONCASTER, ROYAL INFIRMARY AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, residence, and laundry.

EASTERN DISPENSARY, Leman-street, E.—Gynæcologist and Ophthalmic Surgeon. Salary in each case £25 per annum.

EDMONTON UNION.—Waltham Abbey District: Medical Officer and Public Vaccinator. Salary £87 10s. per annum. Also District Medical Officer and Public Vaccinator for Winchmore Hill District. Salary £25 per annum.

EPSOM, LONDON COUNTY ASYLUM, Horton.—Junior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, apartments, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—Second Anæsthetist. Salary 12 guineas per annum. Also Surgeon to Out-patients.

GLOUCESTER COUNTY ASYLUMS.—Assistant Medical Officer, unmarried. Salary £150 per annum, with rooms, rations, laundry, and attendance.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HARTSHILL, STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

HITHER GREEN, S.E., PARK HOSPITAL FOR CHILDREN.—Senior Assistant Medical Officer. Salary £250 per annum, with board, lodging, and washing.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Anæsthetist.

KILMARNOCK INFIRMARY.—House Surgeon. Salary £80 per annum, with board, &c.

LEAMINGTON SPA, WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—House Physician. Salary £85 per annum, with residence, board, and laundry.

LEEDS GENERAL INFIRMARY.—Resident Ophthalmic Officer. Salary £100 per annum. Resident Aural Officer. Salary £100 per annum. Resident Ophthalmic and Aural House Surgeon. Salary £50 per annum. With board, residence, and washing.

LEICESTER INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board and residence.

MIDDLESEX HOSPITAL, W.—Physician to the Hospital and Physician to Department for Diseases of the Nervous System. Also Two Assistant Physicians.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Resident Medical Officer. Salary £100 per annum, with board and residence.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with quarters, board, and laundry.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Honorary Dental Surgeon.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, N.E.—House Surgeon, for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £50 per annum, with board and washing. Also Honorary Surgeon to the Throat, Nose, and Ear Department. Also Honorary Clinical Assistants to the Out-patient Staff.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SALFORD ROYAL HOSPITAL.—Casualty House Surgeon. Salary at rate of £50 per annum, with board and residence.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £80 per annum, with board, residence, &c.

SHEFFIELD ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary £60 per annum.

SHERWOOD FOREST, RANSOM SANATORIUM FOR CONSUMPTIVES, near Mansfield, Notts.—Resident Medical Officer (female). Salary £160 per annum, with board, residence, and washing.

SHOREDITCH AND FINSBURY TUBERCULOSIS DISPENSARY.—Medical Officer. Salary £250 per annum.

SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer for six months. Salary £80 per annum, with board, residence, and laundry.

SUNDERLAND ROYAL INFIRMARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and laundry.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board, lodging, and laundry.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford.—Junior House Surgeon. Salary at rate of £75 per annum, with board, residence, and washing.

WESTERN DISPENSARY, Rochester-row, Westminster.—Resident Medical Officer. Salary 100 guineas per annum, with fire, light, apartments, and attendance.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum.

WORCESTER GENERAL INFIRMARY.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

WORKINGTON, BOROUGH OF, AND FEVER HOSPITAL.—Medical Officer of Health and Superintendent of Fever Hospital. Salary for the former £150 per annum, and the latter £50 per annum.

ZANZIBAR PUBLIC HEALTH DEPARTMENT.—Health and Quarantine Officer. Salary £600 per annum.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Bedale, in the county of Yorkshire, North Riding; at Crondall, in the county of Hampshire; at Foxford, in the county of Mayo; at Newcastle, in the county of Limerick; and at St. Mary's, Scilly Isles, in the county of Cornwall.

THE Secretary of State for the Home Department, Whitehall, S.W., gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 1 (attached more particularly to Morpeth and Blyth, North Shields, Newcastle, Gateshead, Hexham, and Bellingham County Courts).

Births, Marriages, and Deaths.

BIRTHS.

BOYD.—On Jan. 10th, at Belsize Park-gardens, the wife of Sidney Boyd, M.S., F.R.C.S., of New Cavendish-street, W., of a daughter.

POLSON.—On Jan. 11th, at Seaborough, Highcliffe, Hants, the wife of J. Ronald Polson, M.D., of a daughter.

PRYN.—On Jan. 13th, at Royal Naval Hospital, Haslar, the wife of Deputy-Surgeon-General Pryn, R.N., of a son.

MARRIAGES.

CAMPBELL—RUXTON.—On Jan. 11th, at the Church of St. Joseph and St. Francis Xavier, Richmond, Yorkshire, Basil Patrick Campbell, F.R.C.S. Edin., to Mildred Agnes, younger daughter of the late Rev. Frederick Dashwood Ruxton and of Mrs. Ruxton, of Westfield House, Richmond, Yorkshire.

CRICHTON-BROWNE—BULWER.—On Jan. 16th, at Holy Trinity Church, Sloane-street, Sir James Crichton-Browne, M.D., F.R.S., to Audrey Emily, eldest daughter of the late General Sir Edward Bulwer, G.C.B.

WARREN—JENKIN.—On Jan. 10th, at St. Paul's Church, Ramsgate, by the Rev. G. P. Haydon, uncle of the bridegroom, Richard Warren, F.R.C.S., M.Ch., of 29, Weymouth-street, W., younger son of General Sir Charles Warren, G.C.M.G., J.P., to Violet Irené, eldest daughter of A. C. Jenkin, Esq., of Rose Cottage, Heamoor, Cornwall.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE HEALTH AND SANITATION OF TRINIDAD.

A REPORT on the Blue-Book of the Colony of Trinidad and Tobago for the year ended March 31st, 1911, has been received at the Colonial Office and laid before Parliament. It states, *inter alia*, that the present estimated population is 368,014, as compared with 273,899 ten years ago. The birth-rate for the year, calculated on the mean estimated population, was 31·8 per 1000, and the death-rate similarly computed was 20·5 per 1000. The principal causes of mortality during the year were: diarrhœa, 601; fevers, 674; phthisis, 340; enteritis, 305; bronchitis, 351; pneumonia, 367.

The reports of the district medical officers show steady improvement in the health conditions of their respective districts. No special anti-malarial works are recorded, but educational efforts have been continued, and the diminished prevalence, more especially of the graver forms of malaria, indicates a more general and intelligent appreciation of the subject of malarial prophylaxis and treatment. Many of the district medical officers direct special attention to the increasing prevalence of ankylostomiasis and to the high infantile mortality. An Ordinance has been introduced into the Legislative Council containing provisions intended to give larger powers for controlling the spread of the former disease, and a scheme for providing nurse-midwives in certain districts with the object of dealing with the latter condition is under consideration. Twelve cases of bubonic plague occurred during the year. In addition to disinfection, special scavenging, and rat destruction, inoculation with anti-plague vaccines was extensively performed. Two fatal cases of yellow fever occurred; in each case the person attacked had recently arrived in the colony. Throughout the year anti-mosquito regulations were enforced; 473 informations were laid on account of the presence of mosquito larvæ on premises, and fines amounting to £115 were recovered. In Port-of-Spain a new abattoir was opened, and a filtration plant had been added to the waterworks. No case of infectious disease was introduced into the colony from outside. A Clayton disinfector, brought into use in 1910, has been found to work satisfactorily in the fumigation of large steamers from infected ports. The death-rate of the colony shows that the climate cannot be considered unhealthy, and for the most part European residents who take ordinary precautions enjoy as good health as in colder climates, but in certain malarial districts special precautions are requisite. Observations taken at 72 different stations in Trinidad during 1910 showed a mean rainfall for the year of 82·65 inches, the average in the preceding 20 years having been only 65·9. The mean temperature for the year was 77·9°.

The two principal hospitals are in Port-of-Spain and San Fernando respectively. At the former the admissions during the year numbered 5796, the discharges 5027, and the deaths 742, the daily average of patients in hospital being 287. Of the 5027 discharged, 2195 had been cured, 2674 had been relieved, and 158 showed no improvement when discharged. At San Fernando the admissions numbered 3107, the number discharged was 2747 (614 cured, 1993 relieved, and 140 not improved), the deaths 341, and the daily average of patients 108. There are seven district hospitals maintained by the Government in the districts of Arima, St. Joseph, Tacarigua, Couva, Princestown, Cedros, and Scarborough (Tobago). Temporary hospitals are also provided at Chaguanas, Sangre Grande, and Mayaro for use when occasion requires; and two hospitals for the special treatment of patients suffering from yaws are maintained, one at Scarborough (Tobago), with 79 inmates on March 31st last, and the other at St. Augustine (Trinidad), with 135 inmates at the same date. With regard to the latter, it is noted that in consequence of the treatment of the disease by means of "salvarsan," introduced during the year, the number of the inmates, which was 212 on March 31st, 1910, had been reduced to 135 on March 31st, 1911.

The leper asylum, which is situated about two miles to the west of Port-of-Spain, contained 273 inmates on March 31st, 1911. During the year the admissions numbered 65, the discharges 31, and the deaths 34.

THE SERVANT PROBLEM.

ONE of the commonest subjects of general and plaintive discussion at the present day is the difficulties of the "servant problem." There are few indeed who have not suffered under it, and it is admittedly becoming more and more acute. One great point is almost universally lost sight of in considering the servant problem, and that is the great change in the outlook and point of view of every man, woman, and child in the country, that has gradually been coming about as a consequence of the social change resulting from the introduction of increased facilities of locomotion and communication. In olden times, the times "when servants were servants," communities were more or less circumscribed, there was a smaller proportion of people able or desiring to "keep a servant," or servants, and the supply was consequently very largely drawn from local sources. The girls, as they

grew up with domestic service before them, knew at least by repute all about their prospective employers. The employer also knew, or could easily find out, all about the character, tastes, ability, and disposition of the prospective maid. In her evenings off the girl had her parents and village friends handy, and the latter, being known to "the family," had facilities afforded them for keeping up social intercourse with their womenkind in domestic service. But all this is changed. The girl who goes out to service goes away for the most part far from home and friends. She enters a household of the personalities composing which she knows nothing and has no opportunity of learning anything before making the experiment at her own risk. Other occupations now opened up to young women of the poor offer to them a release from this difficulty. As a consequence, moreover, of the very different training children of all classes now undergo, and the consequently different ideals with which they grow up, any restraint, such as is inevitable in domestic service, becomes altogether repellent. It is idle to attempt to change the conditions of domestic service to suit this latter class, but it is of the utmost importance that a well-planned endeavour should be made so to readjust them that those whose outlook on life has not materially changed may find an attractive broadening and enlarging of their own possibilities in the sphere of domestic work. Such an attempt, it appears to us, is being made by the Women's Industrial Council (Incorporated), of which the Countess of Aberdeen is President, in its Inquiry into the Conditions of Domestic Service, "the largest single industry in this country." The council has collected the alleged drawbacks to domestic service, as well as the various suggestions that have been offered for their amelioration, and grouped them into four heads as follows: (*a*) Complete absence of organisation in the trade; (*b*) wages; (*c*) disadvantages of domestic service as compared with other trades; (*d*) prospects. The honorary secretary's address is 7, John-street, Adelphi, London W.C.

STEAM COOKING.

In ordinary households, where a regular cook is not kept, it is to b feared that less care is nowadays bestowed on the cooking of meals than was formerly the case. Yet it is not too much to say that much mischief, physical, mental, and by consequence moral, results from the use of improperly cooked food. Potatoes, for instance, of old time used to be steamed in a colander, not boiled, and the starch grains were properly broken up. That took three-quarters of an hour; now they are frequently boiled, which can be done in a little over 20 minutes, but with the result that they are neither so nourishing nor so palatable, and are less digestible. The same thing applies to many articles of diet. In these gad-about days the housewife grudges the time taken for steaming, as where some articles are steamed while others are roasted, baked, or boiled, it demands her attention much longer exclusively to the cooking. If, however, all the food were steamed, this objection would not hold good, because when once steam cooking is started it can be left alone, leaving attention free to be directed to other things. There can be little doubt that most foods are rendered not only more nutritious but also more palatable by steaming than by boiling or stewing. They are lighter and the delicate flavours are better retained. We have received a little pamphlet ("Recipes for Steam Cookery," by "Helen Whyldon." Printed by Polsue, Limited, Gough-square, Fleet-street, E.C., price 1*d.*) containing a collection of recipes for steam cooking as applicable to fish, meat, vegetables, puddings, and other dishes, including much that would be of use for the invalid.

CHRISTMAS DRESSING-UP.

It is to be hoped, perhaps vainly, that school teachers, parents, and all likely to be responsible for the dressing up of children and others for Christmas performances next December will recollect and be warned by some of the terrible fatalities which occurred during the recent holidays. The inquest upon the deaths by burning of five children at Chesterfield has been concluded, and although the verdict of the jury did not assign responsibility for the disaster to any of the grown-up persons concerned in preparing the performance which ended so fatally, the tragedy will no doubt remain graven in their memories as one which might have been avoided if someone, or if all concerned, had exercised the care which the situation demanded. A score or more of children were crowded together in two small rooms to be dressed for a performance in which the costumes were of a highly inflammable character, many of them being decorated with cotton-wool, the usual cheap and easily obtainable imitation of snow. There was so little supervision that on the night preceding the disaster two of the young girls engaged smoked cigarettes while wearing dresses covered with cotton-wool, and the fatal ignition of clothing occurred when these two girls (both burnt to death) and four or five companions dressed in the same way were "playing with fire on the following evening." The only evidence available showed that apparently some of these half-dozen children in a room containing others not so engaged were throwing upon the flames of an open grate fragments of cotton-wool, one of which escaped past the fireguard and fell amongst them. Everyone knows what children are and the extraordinary fascination which such an amusement as that indicated exercises upon them. Everyone, also, should be aware of the extremely inflammable character of what is known as cotton "wool," and it must be remembered that every Christmas at least one or two inquests are recorded as being held upon fatal cases of burning through cotton-wool used to represent snow. Grown-up people, moreover, if often careless with regard to children, are not less rash where they themselves are concerned. This year we have noticed the case of a clergyman who was injured by being burnt through his beard of cotton-wool catching fire while he was impersonating Father Christmas, and an inquest has since been held at Dover upon a young lady fatally burnt while representing the same character. In her case a robe of crimson flannelette caught fire. Christmas "dressing-up" in which snow figures as a seasonable adjunct to performances are not likely to be discontinued on account of such incidents as we have commented upon, but we should have thought that their universal popularity, combined with their obvious and proved danger, might suggest to some enterprising manufacturer the desirability of devising and advertising a non-inflammable substitute for cotton-wool.

EXAMINATION FOR LIFE ASSURANCE.

We have received a communication from a correspondent enclosing a medical examiner's report for a certain life assurance company and stating that he had declined the fee of 10*s.* 6*d.* which was offered him and claimed the sum of 21*s.*, which the company refused to pay. The form which our correspondent was asked to fill up was an unnecessarily long one, and although most of the questions only required "Yes" or "No" for an answer, nevertheless the number of questions might perfectly well have been lessened. For instance, the medical examiner is requested to ask the applicant no less than 37 questions in regard to possible past illnesses and symptoms! Also, if the applicant is under 21, the collateral family history of uncles and aunts may be required, the health and ages of those living, and the ages at death and the cause of death of those who have died. The form, taken as a whole, is the longest and most detailed which we have seen, and to require such a form to be filled up, together with the necessary examination of the patient, for 10*s.* 6*d.*, is certainly taking an unfair advantage of the medical examiner. We consider that a fee of not less than £1 1*s.* should always be paid for examination for life assurance. The companies who offer only 10*s.* 6*d.* when the sum assured is less than a certain amount fail to realise that the time and care devoted to the case by the examiner are just as great for the small sums as for the large. If for large amounts the fee were increased to £2 2*s.* there might be some excuse on the part of the companies who offer the lower fees, but such is not the case, and we consider that our correspondent was perfectly right in demanding the full fee of £1 1*s.* Another point raised by our correspondent is that of the companies referring to the ordinary medical adviser of the applicant should it be deemed advisable. Such a course is adopted by all insurance companies, we believe, but naturally a fee should be paid for the desired information.

BOVRIL PICTURES.

We have received from Bovril, Limited, a series of bonus pictures which they have selected for the current year. The framed artist proof of "The Pilgrims," by A. A. Dixon, is an excellent reproduction; the size of this gravure is 27½ × 19 in., and the full size of the paper is 40 × 30 in. The picture entitled "An Idyll," by Paul Gervais, is very good and full of detail. The original of this was painted for the town-hall of Toulouse and was exhibited in the Salon last year; this gravure measures 14 × 20 in. These pictures, including "The Joy of Spring," by Arthur J. Elsley, will attract attention, and credit is due to Messrs. C. W. Faulkner and Co., Limited, for such artistic reproductions.

Mr. W. C. Storey.—The manager of the Exchange in connexion with the Medical Library Association, which was mentioned in an annotation last week, is Miss M. C. Noyes, 1211, Cathedral-street, Baltimore, Maryland, U.S.A.

Communications not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

We shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced for the next few months:—

Jan. 20th–27th (Hong-Kong).—Second Biennial Congress of the Far Eastern Association of Tropical Medicine.

Feb. 13th–14th (London).—Central Poor-Law Conference.

March 7th–11th (Berlin).—Thirty-third Balneological Congress.

March 23rd–April 4th (London, Royal Agricultural Hall).—International Smoke Abatement Exhibition.

" (London).—First Congress of Pure Food and Health Society of Great Britain.

April 1st–7th (Tunis).—Twenty-second Congress of French-speaking Alienists and Neurologists.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 15, Cavendish-square, W. (temporary address during building of new house).

MONDAY.

ODONTOLOGICAL SECTION (Hon. Secretaries—W. W. James, Stanley Mummery): at 8 P.M.

Paper:

Mr. J. F. Colyer: The Treatment of Periodontal Disease.

Casual Communications:

Mr. A. T. Pitts: Apparent Symmetrical Bifurcation of the Roots of the Upper Temporary Central Incisors.

Mr. Bertram B. Samuel: A Crowned Tooth with a Perforated Root.

TUESDAY.

MEDICAL SECTION (Hon. Secretaries—Sir John F. H. Broadbent, Bart., Robert Hutchison): at 5.30 P.M.

Paper:

Captain McCarrison, I.M.S.: The Vaccine Treatment of Goitre.

THURSDAY.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION (Hon. Secretaries—A. Manuel, F. A. de T. Mouillot): at 5.30 P.M.

Paper:

Dr. F. M. Sandwith: Bubonic Plague (illustrated by the epidiascope).

The subject being of general interest Members of other Sections are specially invited to attend.

FRIDAY.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN (Hon. Secretaries—T. R. Whipham, H. S. Clogg, Percy G. Lewis), at 11, Chandos-street, W.: at 4.30 P.M.

Cases:

Mr. D. Drew: Five Cases illustrating the Results of Muscle-transplantation for Paralytic Talipes Valgus.

Dr. T. Thompson: Two Brothers with Hæmophilia.

Dr. E. Pritchard and Mr. S. Stephenson: Cerebellar Tumour. And other Cases.

Paper:

Mr. P. Turner: The Radical Cure of Inguinal Hernia in Children.

EPIDEMIOLOGICAL SECTION (Hon. Secretaries—W. H. Hamer, G. S. Buchanan): at 8.30 P.M.

Papers:

Dr. R. J. Reece and Dr. H. Bruce Low: Poliomyelitis.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Clinical Evening. Cases will be exhibited by Dr. A. C. D. Firth, Dr. F. Parkes Weber, Dr. Michels, Dr. F. S. Palmer, Mr. W. G. Howarth, Mr. E. M. Corner, and others.

HUNTERIAN SOCIETY, London Institution, Finsbury-circus, E.C.

WEDNESDAY.—9 P.M., Clinical and Pathological Evening.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Cases and Card Specimens will be shown by Mr. A. C. Roper, Mr. A. A. Bradburne, Mr. G. Coats, Mr. R. Batten, Mr. L. Pisani, and Mr. R. A. Greeves. 8.30 P.M., Papers:—Mr. J. H. Parsons and Mr. E. K. Martin: The Action of Ultra-violet Rays upon the Ciliary Body and Lens.—Mr. A. A. Bradburne: Hereditary Ophthalmoplegia in Five Generations.—Mr. G. Coats: On Crystal-like Bodies of Radiate Structure in the Lens.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. L. Bunch: Clinique (Skin). 5.15 P.M. Lecture:—Mr. J. L. Mummery: Non-malignant Stricture of the Rectum.

TUESDAY.—4 P.M., Dr. H. Thursfield: Clinique (Medical). 5.15 P.M., Lecture:—Dr. H. Campbell: Alcoholism and its Treatment.

WEDNESDAY.—4 P.M., Mr. O. L. Addison: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. A. H. Tubby: Surgical Treatment of Lesions of the Brachial Plexus.

THURSDAY.—4 P.M., Mr. A. Carless: Clinique (Surgical). 5.15 P.M., Lecture:—Sir G. H. Savage: Medico-Legal Relationships of General Paralysis.

FRIDAY.—4 P.M., Dr. J. D. Grant: Clinique (Ear, Nose, and Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Clinical (Lecture I.).

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 11.30 A.M., Mr. Etherington-Smith: Demonstration of Minor Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Davis: Diseases of the Nose. (Lecture III.)

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. 2.30 P.M., Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Bernstein:—Blood Examination—Morphology.

THURSDAY.—10 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery. (Lecture II.)

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Saunders: Clinical (with cases).

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. B. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld).; Surgical (Mr. Howell Evans); Gynæcological (Dr. A. B. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Mr. F. Trewby: The Causes of Death under Anæsthesia at the Time of Operation and After.

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. B. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. F. Chappell). 4.30 P.M., Lecture:—Mr. F. Trewby: The Points which Determine the Choice of Anæsthetics for Surgical Operations.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. B. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Mr. Turner: Surgery. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.30 P.M., Mr. R. Lake: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 3.15 P.M., Dr. R. Wells: Medicine. 2.15 P.M., Mr. R. Carling: Surgery. 4.15 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 5 P.M., Special Demonstration (or Lecture):—Mr. McGavin: Surgical.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4.30 P.M., Special Lecture:—Dr. G. Holmes: Functional and Organic Paralysis.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Sir J. Rose Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—10 A.M., Radiography. 11 A.M., Dr. A. Davies: Pathological Demonstration. 2 P.M., Operations. Out-patient Demonstration:—10 A.M., Surgical and Medical. 11 A.M., Eye.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Dr. Thompson: Typhoid Fever in Infancy and Childhood.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—6 P.M., Dr. K. Sibley: Eczema.

THURSDAY.—6 P.M., Chesterfield Lecture:—Dr. M. Dockrell: Coccus Diseases—I., Impetigo Contagiosa; II., Furuncle; III., Carbuncle; IV., Coccogenic Sycosis.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Prof. W. Bateson: The Study of Genetics. (Lecture II.)

FRIDAY.—9 P.M., Prof. B. Hopkinson: The Pressure of a Blow.

ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.

WEDNESDAY.—4 P.M., Dr. M. S. Paterson: Employment of Patients in Sanatoria. 4.30 P.M., Dr. D. J. Williamson: Anti-Tuberculosis Dispensaries.

FRIDAY.—4 P.M., Prof. R. P. Williams: Open Air Schools (illustrated by lantern slides).

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: The X Ray Diagnosis of Œsophageal Obstruction, with Fluorescent Screen. (Post-Graduate Clinic.)

MANCHESTER ROYAL INFIRMARY.

MONDAY.—4.30 P.M., Dr. B. S. Reynolds: Banti's Disease and Hodgkin's Disease.

FRIDAY.—4.30 P.M., Mr. J. W. Smith: On the Result of Some Operations on the Stomach.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.), Central London Throat and Ear (Minor 9 A.M., Major 2 P.M.).

TUESDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London, (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.), Royal National Orthopædic (9.30 A.M. and 4 P.M.).

WEDNESDAY (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's 2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal National Orthopædic (9 A.M. and 3.30 P.M.), Royal Ear (2 P.M.), Children Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M., Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Royal National Orthopædic (3.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (27th).—Royal Free (9A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic (2 P.M.), Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1911 were given in THE LANCET of Dec. 30th, 1911.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1911 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
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Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 17th, 1912.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain fall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Jan. 11	30·07	S.W.	...	53	48	42	43	45	Cloudy
,, 12	30·27	S.W.	0·02	51	47	42	42	43	Overcast
,, 13	30·15	S.E.	0·04	51	49	43	45	46	Raining
,, 14	30·06	W.	0·01	45	45	43	42	44	Overcast
,, 15	29·91	S.	...	49	47	44	44	45	Overcast
,, 16	29·77	S.E.	...	48	46	44	43	44	Overcast
,, 17	29·89	E.	0·30	40	39	48	37	38	Raining

The following journals, magazines, &c., have been received:—Journal of State Medicine, Proceedings of the Royal Society, Bulletins et Mémoires de la Société de Radiologie, International Journal of Surgery, Archives de Médecine et de Pharmacie Militaires, La Clinique Ophtalmologique, Revue de Gynécologie, London Hospital Gazette, British Journal of Dental Science, Probe, Indian Medical Journal, Practitioner, Women's Industrial News, Monthly Cyclopædia, Indian Medical Gazette, Public Health, Annales des Maladies des Organes, Génito-Urinaires, Journal of Laryngology Rhinology, and Otology, Northwestern University Bulletin, Symons's Meteorological Magazine, American Journal of Gastro-enterology, St. Paul's Medical Journal, Critic and Guide, Hospital Gazette, L'Hygiène de la Viande et du Lait, Albany Medical Annals, Archives of Pediatrics, Canadian Journal of Medicine and Surgery, Philippine Journal of Science, Military Surgeon, Maryland Medical Journal, Clinical Medicine, Malay Medical Journal, Universal Medical Record, American Journal of Obstetrics, Archives Internationales de Neurologie, Medical Review, Annals of Tropical Medicine and Parasitology, Tuberculosis, Indian Medical Record, South African Medical Record, Transactions of the Society of Tropical Medicine and Hygiene, Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, Journal of Anatomy and Physiology, and St. George's Hospital Gazette.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Mr. T. E. Atkins, Lond.; Anglo-American Pharmaceutical Co., Croydon; Dr. S. W. Aiken, Muskogee, U.S.A.; Mr. Thomas Allen, Box; American Medical Association of Vienna, Secretary of; Dr. John Alcindor, Lond.; Mrs. Hubert Agar, Highworth; *American Journal of Clinical Medicine*, Chicago.

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